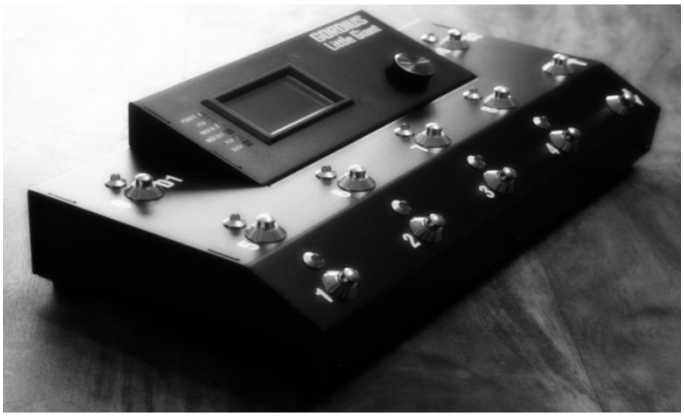
# User Manual

# GORDIUS LG

## Little Giant MIDI foot controller



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# About this manual

This is the user manual for following GORDIUS products :

- Little Giant 2 (LG2) with firmware v.3.0 or higher
- Little Giant Module 2 (LGM2) with firmware v.3.0 or higher
- Big Little Giant 2 (LGX2) with firmware v.3.0 or higher

A different user manual is available for first generation products and LG2/LGM2/LGX2 units with older firmware.

Most of the features are identical for all 3 product types (apart from the obvious differences like number of available footswitches). Throughout the manual we will talk about the Little Giant or “LG2”, actually referring to any of the 3 product types.

The first chapters of the manual introduce you to the Little Giant and the most important concepts of a LittleGiant setup.

The next chapters contain a detailed reference guide about all available setup features. The manual sequentially covers each of the tabs of LG2 Control Center (the PC or Mac editor for the LG2). This is indeed the most logical order in which a setup is built from the ground up. Each topic also mentions how to set up the discussed feature through the local LG2 menus, instead of using Control Center.

An important chapter is the one which covers all the supported message types for a preset message stream. Apart from offering the regular functionality of most of the high-end MIDI foot controllers, the Little Giant offers many unique features through the use of GORDIUS-specific commands. These can be inserted in a preset message stream next to regular MIDI messages. Therefore, the command reference chapter is the place to discover the extensive possibilities of your controller.

Finally, the manual concludes with a troubleshooting chapter and few appendices which give you a short overview of the different product specs.

# 1 The Little Giant : a quick overview

## *1.1 The Little Giant Rear Panel*

1. Power input jack with power switch.

   The Little Giant is compatible with a wide range of power adapters. Both AC and DC adapters are supported, DC adapters can have a positive-center or negative-center pinning. The adapter voltage output range can be between 9V and 12V, with 9VDC being the preferred adapter type. The adapter needs to provide at least 500 mA current. If a single adapter is used for powering multiple devices (through one of the phantom power options offered by the LittleGiant), make sure it provides sufficient current to power all devices simultaneously.

2. USB connection

   The USB connection can be used to connect the LittleGiant to a Windows, Mac, or Linux PC. The LG2 will be recognized as a standard USB-audio device. It is compatible with built-in drivers on all supported operating systems, so no additional driver installation is required.

3. Main MIDI IN / MIDI OUT connector pair

   The MIDI OUT port is the main connection to all the gear you want to control using your Little Giant. The MIDI IN port can be used to merge an additional incoming MIDI signal with the messages generated by the Little Giant. The LG2 can also do some extra processing on the incoming MIDI signal, like MIDI Channel filtering, MIDI Clock processing, etc.

4. FCB (FloorControlBoard) connector pair

These ports can be used for connecting one or more external slave controllers which provide extra switches (up to a total of 64 switches!). When not using an external slave controller, the ports will behave like an extra pair of regular MIDI IN/OUT ports. In that case, the LG2 acts as a 2 x 2 MIDI merge box plus MIDI-USB interface, along with its own capabilities as advanced MIDI controller of course.

5. Combined expression pedal / external switch inputs

Four high quality Neutrik stereo jack connectors can be used to connect expression pedals or additional footswitches to the LG2. Each of the jacks can be individually configured to be used for any of the following devices :

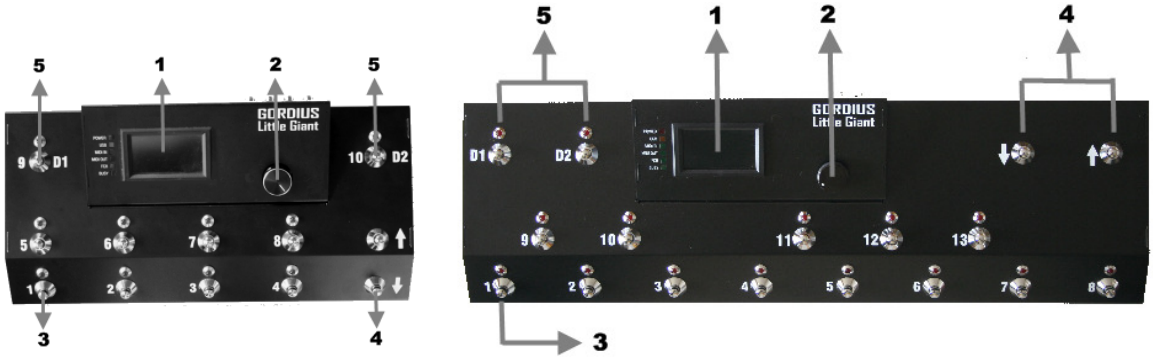
- An expression pedal
- A single footswitch with mono jack
- A dual footswitch with stereo jack

Expression pedals with a wide range of potmeter resistance values and any type of taper (logarithmic or linear) are supported, since the LG2 contains possibilities for digital sweep curve shaping. This advanced and programmable curve shaping allows you to use an expression pedal or a volume pedal for all types of adjustment (volume, wah, pitchbend, or any other sound effect parameter), and when required this can be configured differently for each preset.

Also the pedal wiring is fully configurable in the LG2. As a result both “Roland type” pedals (with wiper connected to the jack tip) and “Yamaha type” pedals (with wiper connected to the jack ring) can be used without need for resoldering the jack wiring.

As for the switches, both momentary switches and latched switches are supported, both “normally open” and “normally closed” switches, and the stereo jack of dual footswitches can have any of the possible wirings (common lead wired to sleeve, ring or tip).

## *1.2 The Little Giant Top View*




1. OLED graphical display

   The graphical display allows a user friendly menu setup, along with different runtime display modes with adjustable font sizes. The OLED technology requires no backlight, each pixel acts like a small LED on its own, resulting in a bright display with extremely high contrast, suitable in varying ambient lighting conditions.

2. Rotary control knob

   Turning and clicking this digital knob allows for menu navigation, data entry, and display mode selection. Moreover, the knob can also be configured to be used for realtime MIDI control.

3. Preset footswitches

   The footswitches used for preset selection. The unique design of the switches allows them to be used both as footswitch or as “manual” switch for desktop use. Although rugged all-metal switches, they are more silent than regular footswitches used for this type of application. The LG2 has 10 preset footswitches. The LGX2 has 13 preset footswitches with a “piano keyboard” layout. This is not only handy to create a few synth banks and play notes with your feet (one of the many things you can do with this MIDI controller), but it also allows you to group the switch functionality in a convenient way (8 + 2 + 3 grouped switches)

4. Up/down footswitches

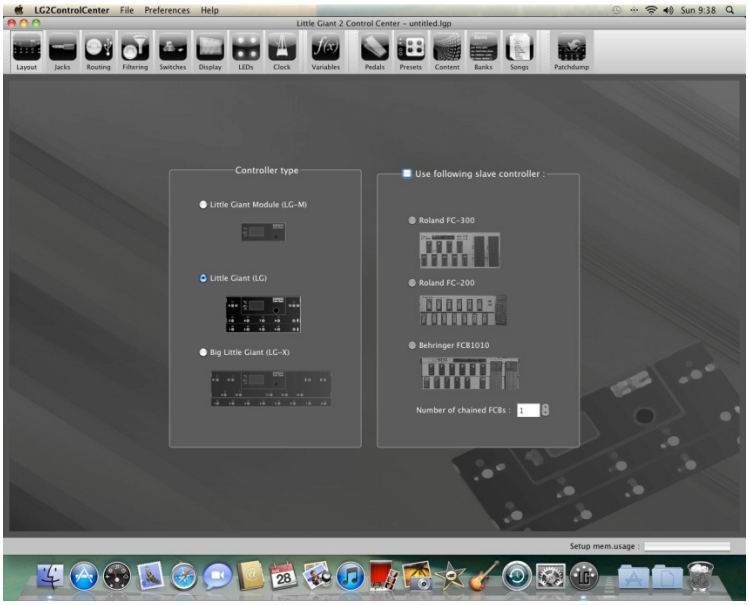
   Used for scrolling through banks or through songs in a setlist. Keeping the up or down switch pressed for a second engages auto-scrolling.

5. “Preset 9 / DirectBank1” and “preset 10 / DirectBank2” footswitches

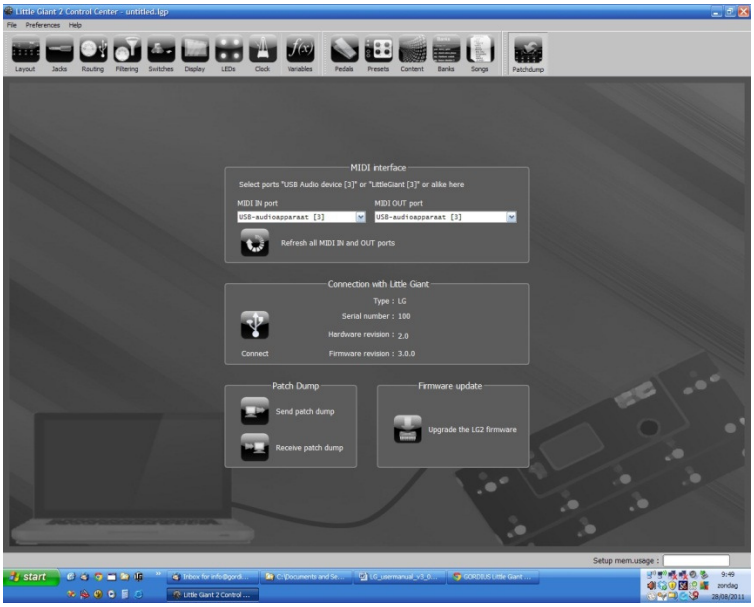
   The Big Little Giant (LGX2) has 2 dedicated Direct Bank switches. On the Little Giant (LG2), the footswitches 9 and/or 10 can be configured to act as Direct Bank switches instead of “preset” switches. These allow direct single-click access to 2 configurable banks, containing a set of commonly used presets. Several different modes of operation can be configured for optimizing the use of those footswitches. This allows you to do things with the very compact LG2 which normally would require a much larger floorboard.

## *1.3 The LG2 Control Center*

The LG2 Control Center is a powerful setup editor for the Little Giant. It can be freely downloaded from the GORDIUS website at www.gordius.be. Versions for Windows and for Mac OSX are available. The tool allows you to manage every single aspect of your Little Giant. It lets you create and backup patch dumps and can also be used to upgrade the LG2 firmware over USB. Although all features of the LG2 can also be configured through its local setup menu's, which are displayed on the built-in large size graphical display, using the computer editor is obviously more user friendly. Using the editor allows you to keep a good overview on your complete setup, even when creating very extended setups. The setup reference in later chapters will guide you through all screens of the ControlCenter editor in detail. A few screenshots :


LG2ControlCenter File Preferences Help
Little Giant 2 Control Center - untitled.lgp
Layout Jacks Routing Filtering Switches Display LEDs Clock Variables Pedals Presets Content Banks Songs Patchdump
Controller type
Little Giant Module (LG-M)
Little Giant (LG)
Big Little Giant (LG-X)
Use following slave controller :
Roland FC-300
Roland FC-200
Behringer FCB1010
Number of chained FCBs :
Setup mem.usage :

*LG2 Control Center for Mac*

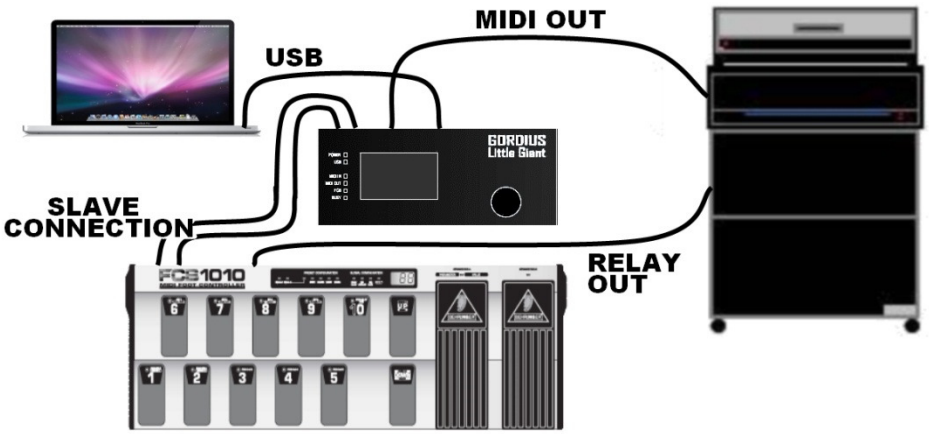

Little Giant 2 Control Center - untitled.lgp
File Preferences Help
Layout Jacks Routing Filtering Switches Display LEDs Clock Variables Pedals Presets Content Banks Songs Patchdump
MIDI interface
Select ports "USB Audio device [3]" or "LittleGiant [3]" or alike here
MIDI IN port
MIDI OUT port
USB-audioapparaat [3]
USB-audioapparaat [3]
Refresh all MIDI IN and OUT ports
Connection with Little Giant
Type : LG
Serial number : 100
Hardware revision : 2.0
Connect
Firmware revision : 3.0.0
Patch Dump
Send patch dump
Receive patch dump
Firmware update
Upgrade the LG2 firmware
Setup mem.usage :
start

*LG2 Control Center for Windows*

# 2 Getting started

## *2.1 Making the connections*

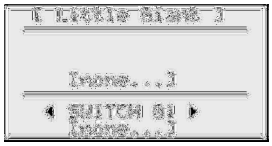
*A sample LG2 interconnection schema*




*A sample LGM2 interconnection schema*

## 2.2 Turning on the power for the first time.

Be aware that your LittleGiant is a „generic“ MIDI controller which is not aimed to control one specific device. Therefore it is shipped without any setup pre-installed. You can compare it to a computer with no application installed, it will just show an almost empty screen at startup.



*Initial overview screen*

The best way to get started, is by connecting your LG2 to your computer (Windows PC or Mac), and using the LG2 Control Center editor to create a first demo setup. We will come to that later in this chapter. Let us first introduce you to the available connectivity of the LG2.

## 2.3 The MIDI connectors : MIDI IN / MIDI OUT / FROM FCB / TO FCB

The function of the MIDI OUT connector is obvious. Connect this port to the MIDI IN port of any device which you want to control with Little Giant. Most MIDI devices offer MIDI THRU functionality, which allows you to chain several devices, and control all of them from the LG2, using the single MIDI OUT connection.

The MIDI IN connector allows you to connect any other device which sends MIDI data, and merge its MIDI output with the MIDI messages sent by the LG2.

The FROM FCB / TO FCB connectors have 2 possible uses :

Their main function is to provide communication with a “slave controller”. In case of the LGM2, a slave controller is necessary to trigger the LGM2 presets. A simple foot controller like the Behringer FCB1010 can be used as a slave, while the LGM2 “brain” adds tons of extra functionality to it. Not only the Little Giant module, but also the LG2 and LGX2 footcontrollers can be extended with one or more slave controllers. This way, people who prefer to have direct access to lots of footswitches can build a floorboard with up to 64 footswitches, all being controlled by the Little Giant processor !

In case you don’t need the slave controller functionality, the FROM FCB / TO FCB ports will act as regular MIDI ports. This turns your Little Giant into a 2x2 MIDI merge box.

*Phantom power and two-way communication*

While a regular MIDI connection requires a 5-pins DIN connector, both the “MIDI OUT” and “FROM FCB” connectors have 7 pins. The 2 extra pins can be used to transport power from the controlled rack back to the LG2, or from LG2 back to the connected slave controller. Additionally, unused pins of the MIDI connectors can be reused to establish two-way communication with the controlled device using one single MIDI cable.

*For details about the different possible MIDI connector configurations, see Appendix* B : Little Giant MIDI connector configurations.

## 2.4 Expression pedals and external footswitches

The 4 input jacks on the back of the LG2 are fully configurable to support different types of expression pedals or external footswitches. Chapter 5 describes this configuration in full detail. An important part of the initial configuration is calibration of the connected expression pedals. Since the LG2 supports a wide range of expression pedal resistance values, a one-time calibration is necessary.

*See chapter 5 for detailed info about setup and calibration of the expression pedals.*

When adding external footswitches to your setup, those can be used in exactly the same way as the internal footswitches of the LG2 or the footswitches of a connected slave controller. All switches together, internal, external and slave switches, give you a "bank layout" which is fully configurable. All of the switches can be used to trigger any type of preset (regular preset or single-shot trigger, on/off type stompbox or activate-while-you-press type momentary effect). This layout can also be different from bank to bank.

## 2.5 The USB connection

*The USB connection provides a very easy way to make any MIDI aware application on your PC controllable by the foot controller. Apart from that, the USB connection also offers high-speed communication between LG2 and LG2 Control Center, the PC or Mac editor. This makes upgrading the firmware of your LG2 a breeze, and also editing, downloading and making backups of your LG2 setups can easily be managed on your USB-connected computer. The Little Giant offers 3 separate MIDI-USB IN/OUT ports on the connected computer. As a result, 3 different MIDI aware applications can be communicating with the LG2 simultaneously. One port is dedicated for communication with the LG2 Control Center. The other two ports offer the functionality of a full 2x2 MIDI-USB interface. The multi-port interface allows you to edit LG2 setups and immediately test them out, without the need to close applications or swap cables. Even more: many MIDI controlled devices have an editor application on their own. Thanks to the multiple USB ports which are linked to the MIDI IN / MIDI OUT connectors, it is possible to edit the LG2 setup, edit the controlled device setup, and actively use the MIDI communication between LG2 and device, all at the same time. In very specific cases, when the controlled device supports this, the LG2 can even be configured to offer 2-way MIDI communication, along with phantom power, over one single 7-lead MIDI cable. This heavily reduces the cabling required to have every device talk to each other : one USB cable and one 7-lead MIDI cable is all it takes! ( see*

Appendix B : Little Giant MIDI connector configurations)

Many different routing options are available for MIDI and USB: MIDI IN signals can be ignored, forwarded to MIDI OUT or to USB, and also the MIDI messages generated by the Little Giant can be sent to USB, to MIDI OUT, or to both simultaneously.

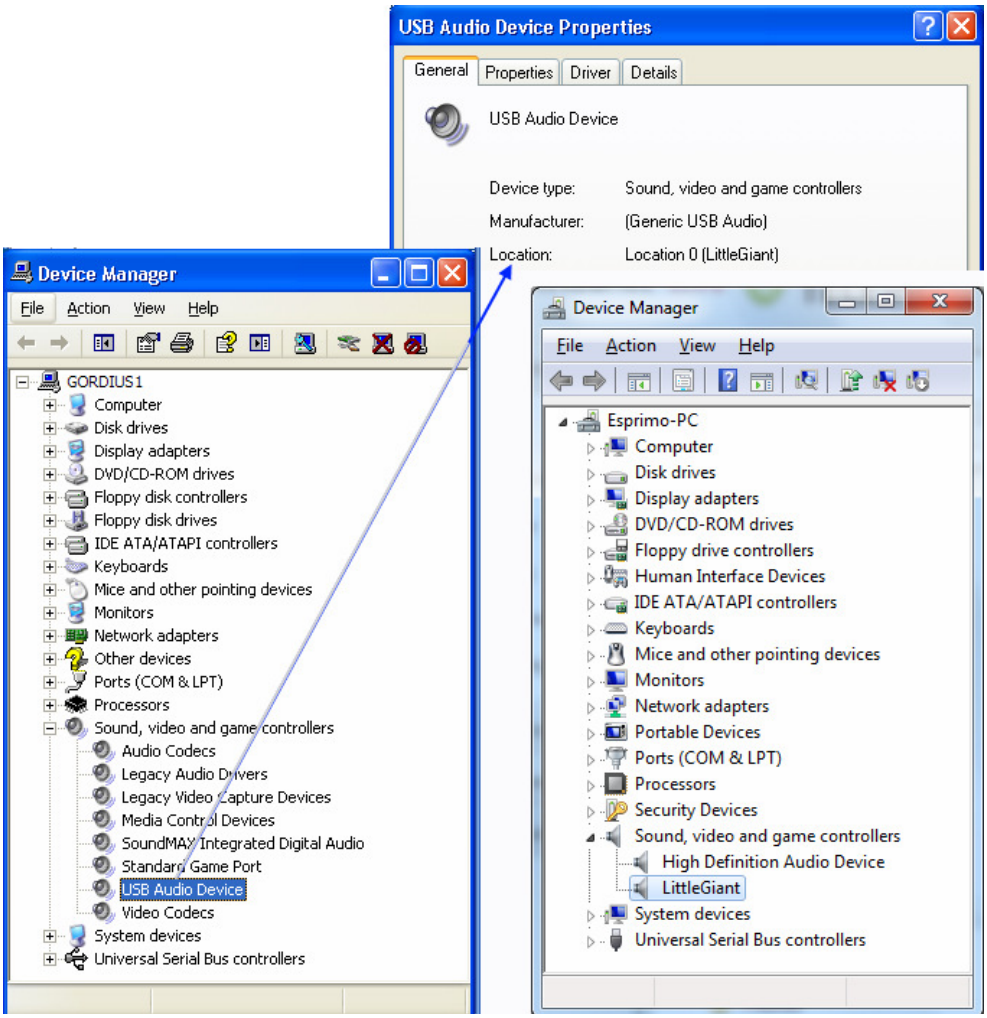
*See chapter 9.7 about setup of the MIDI/USB routing options.*

## 2.6 Connecting to your computer

Upon first connection of the LG2 with your computer, all necessary drivers for MIDI communication are automatically initialized. The LG2 does not require any product specific driver, it uses the generic drivers which are part of the operating system (Windows, OSX, or Linux).

***Windows XP, Vista, 7***

On Windows, a series of status balloons will pop up when connecting your LG2. They show that new hardware has been detected and drivers are being installed. When ready, the system will notify you that „your new hardware is installed and ready to use“. This is also visible in the hardware manager screen of the Windows PC :




*LittleGiant detected as „audio“ device on Windows XP / Windows7*

Since the LG2 uses the built-in drivers of the operating system, it may be visualized as a generic audio device, called something simple like „USB-audio device“. More recent operating systems are able to show more specific info, and display the device as „LittleGiant“.

***Mac OSX***

On Mac, the MIDI driver install happens silently. After connecting the Little Giant, it will automatically appear as MIDI device in MIDI Studio ( Applications > Utilities > Audio MIDI Setup > Show MIDI Window ) You will notice the 3 built-in bi-directional MIDI-USB ports. Compare it to the 2x4 MidiSport (a dedicated MIDI-USB interface) in the screenshot below.

*LittleGiant detected as MIDI device on Mac OSX*

## 2.7 Installing LG2 Control Center

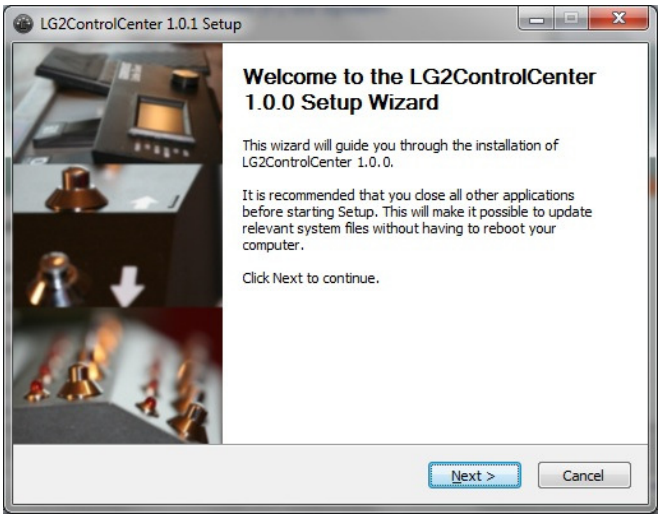
The easiest and fastest way to get up and running with your new Little Giant, is by installing LG2 Control Center.

The LG2ControlCenter installation files can be downloaded from the GORDIUS website ( http://www.gordius.be ) .

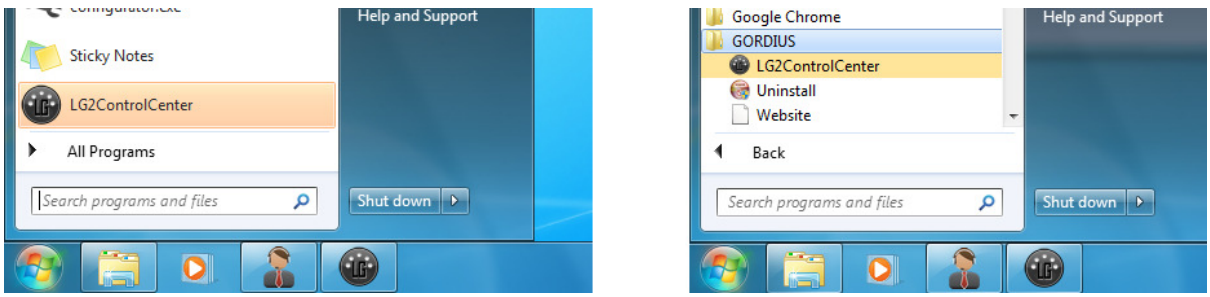
*Remark :*
*We are currently working on a number of sample setups, which will demonstrate the wide range of possibilities which your LG2 offers. We will also provide a wizard which will guide you step-by-step through the creation of a common type of setup (regular control of patches and 2-state effects). As soon as these are available, the user manual will be extended. Contact us if you want to check about availability of those sample setups.*

***Windows XP, Vista, 7***

Download and run the installer file LG2CCSetup.exe. It will guide you through a few install steps, and will then launch LG2 ControlCenter for you.


LG2ControlCenter 1.0.1 Setup
Welcome to the LG2ControlCenter 1.0.0 Setup Wizard
This wizard will guide you through the installation of LG2ControlCenter 1.0.0.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

*LG2 Control Center installation on Windows*




*After install, LG2ControlCenter can be launched from All Programs > GORDIUS*

***Mac OSX :***

Download LG2ControlCenter.dmg. It will automatically open on your desktop :

LG2ControlCenter
2 items, 11,6 MB available
Drag & Drop
LG2ControlCenter
Applications
Once copied, the application will be in your Applications folder. You can then close this window, eject the Install disk and delete the .dmg file.
and then you're ready to unleash your
GORDIUS Little Giant !
LG2ControlCenter

*LG2ControlCenter disk image content*

Just drag the LG2ControlCenter icon to the applications map at the right of it, and ControlCenter will be available in your applications window :

*"Applications" window containing LG2ControlCenter*

After installation, the LG2ControlCenter disk on the desktop can be "ejected".

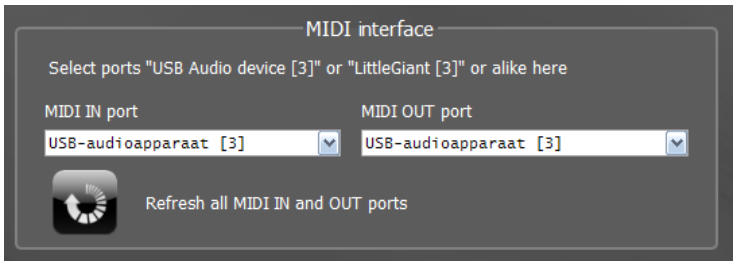
## 2.8 Running the setup wizard

Each and every Gordius customer will probably have a personal approach on how to organize the MIDI control setup for his or her rig. Therefore a general setup wizard will never result in the final setup as you want to use it. However, it can be very helpful as a first step, in order to get familiar with the setup structure, and to have a quick way of testing the basic MIDI functionality of your controller.

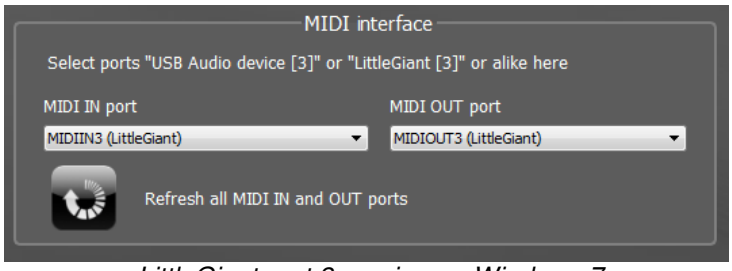
*[ the setup wizard is currently under development. The manual will be extended as soon as this functionality is available ]*

## 2.9 Downloading your first setup to the Little Giant

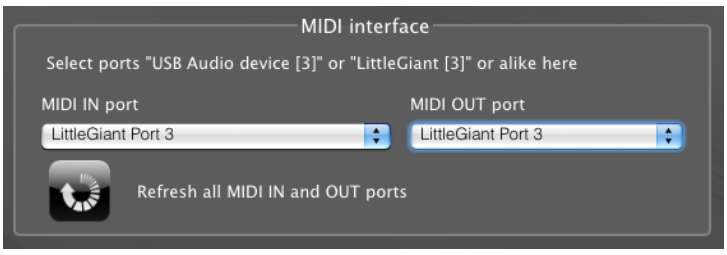
Select the “Patchdump” tab of LG2 Control Center. The top of the screen shows a selection box for MIDI IN port and MIDI OUT port. Your Little Giant will be listed in both drop down boxes, possibly amongst other MIDI interfaces available on your machine. As mentioned before, 3 LittleGiant ports will be available. The exact naming may differ between different operating system versions, since the LG2 uses a “generic” USB driver, which is part of that operating system. It is *very* important to select the *third* LG2 port here, both for MIDI IN and MIDI OUT. This port is a dedicated port, used exclusively for communication between LG2 and ControlCenter.


MIDI interface
Select ports "USB Audio device [3]" or "LittleGiant [3]" or alike here
MIDI IN port
MIDI OUT port
USB-audioapparaat [3]
USB-audioapparaat [3]
Refresh all MIDI IN and OUT ports

*LittleGiant port 3 naming on Windows XP*


MIDI interface
Select ports "USB Audio device [3]" or "LittleGiant [3]" or alike here
MIDI IN port
MIDI OUT port
MIDIIN3 (LittleGiant)
MIDIOUT3 (LittleGiant)
Refresh all MIDI IN and OUT ports

*LittleGiant port 3 naming on Windows 7*

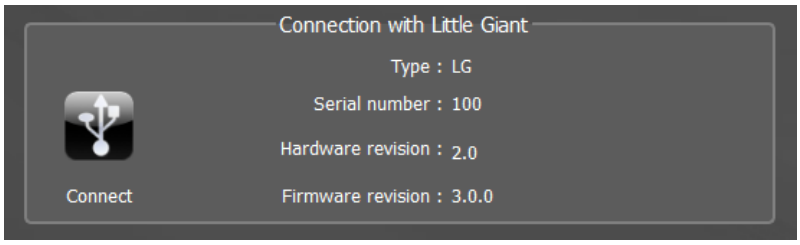

MIDI interface
Select ports "USB Audio device [3]" or "LittleGiant [3]" or alike here
MIDI IN port
MIDI OUT port
LittleGiant Port 3
LittleGiant Port 3
Refresh all MIDI IN and OUT ports

*LittleGiant port 3 naming on MAC OSX 10.6*

As you can see in the screenshots above, the naming of the LG2 MIDI ports differs between the different operating systems. On Windows XP, the LittleGiant is shown as a generic “USB Audio device”, and the ports are labeled “USB Audio device”, “USB Audio device [2]” and “USB Audio device [3]”. On more recent systems, like Windows 7, the Little Giant ports are shown as “LittleGiant”, “MIDIIN2 (LittleGiant)” and “MIDIIN3 (LittleGiant)” and similar for the MIDI OUT ports). A Mac shows the ports as “LittleGiant Port 1”, 2 and 3.

If your LG2 was not connected to a USB input or if it was not powered the moment you launched Control Center, it will not appear in the 2 selection boxes. In that case, click the “Refresh” button in order to update the selection box contents. Also after an LG2 reboot, it will be necessary to use this Refresh button in order to re-initialize the MIDI ports.

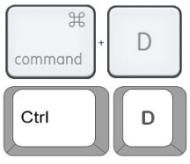
With the third MIDI port selected both as MIDI IN and MIDI OUT device, click the “Connect” button. ControlCenter retrieves some general info from the LG2 (like serial number etc.), and the patch dump buttons are now enabled. You are now ready to exchange setups between LG2 and ControlCenter. Click the “Send patch dump” button to download your setup and store it into the LG2 setup memory.




*LG2 info pane after successful connect*

At all time the ControlCenter status bar gives an indication of the current size of your setup. You will notice that even very extended setups will occupy only a limited portion of the available setup memory.

*Status bar of the ControlCenter main screen*




***Tip :*** while creating or modifying a setup, you might want to do very regular patch dumps to immediately test the changes with your LG2. There is a handy keyboard shortcut which makes this very easy : from within any of the Control Center tabs, press “Ctrl+D” on a Windows machine or “Cmd+D” on a Mac to initiate a patch dump (“D” stands for “Download”). Just make sure that you have correctly established a connection with the LG2 before (the “Send patch dump” button needs to be enabled).

# 3 The LG2 user interface

While previous chapter introduced you to setting up your LG2 with ControlCenter, we will now switch to the LG2 itself, and explain how you can interact with it while no computer is connected. All user interaction for local setup occurs with the single rotary knob. Apart from modifying any part of your setup, you can also choose the preferred display mode with this knob, and even use the knob to do some realtime MIDI control. But we will start this chapter with some info about using the floorboard footswitches. Obviously these are the most important "user interface" of your controller…

## *3.1 The footswitches*

The Little Giant and its optional slave controllers have 3 types of switches.

A set of dedicated Up / Down switches lets you scroll through a selected list of banks, or through the songs of the current setlist. The LG2 configuration offers you a few options to choose the behavior of the up / down switches (for instance the choice to go to the next song with the Up or with the Down switch). When you keep the Up or Down key pressed for a longer time, the LG2 starts auto-scrolling through all banks or songs. This allows you to quickly browse through a large list.

The D1 / D2 switches let you select a "direct bank". Such a direct bank will typically contain some generally used presets, which you want to have easy access to at any time. Although the list of available banks can be very long, the direct banks are always accessible with a single click from any bank.

*Refer to the Switches setup reference (chapter9.9) and the Bank setup reference (chapter 9.17) to learn all details about direct banks.*

The third type of switches are the regular "preset" switches. Clicking such a switch will select a preset and send its according MIDI messages. Since there are different types of presets, you can also say there are different types of preset switches : some switches will select a patch, other switches will activate or deactivate an effect, with the switch LED showing the current state of the effect, etc. It is important to know that the switch layout of your LG2 can be freely chosen. You can assign any type of preset to any switch, and this assignment can be different for each bank. You are not restricted to using a fixed layout with certain rows dedicated to "patch" switches and others dedicated to "effect" switches for instance.

## *3.2 The LEDs*

There are a few things to know about the LG2 switch LEDs: they can be configured in a few different ways. Let's start with the "dimming modes".

### 3.2.1 Switch LED dimming modes

The main functionality of the switch LEDs is obviously to show which preset is currently active, and which stompboxes are activated. Actually the Little Giant LEDs can have 3 possible states : *on*, *off* or *dimmed* (= shining faintly). This gives them the possibility to show more information than simple on/off LEDs. You could compare it to three-coloured LEDs, but with the advantage of the three states being clearly distinguishable even for color blind people…

A first possibility is to never turn the LEDs completely off: they are either *on* or *dimmed*. They work in the classical "2-state" mode, showing if a preset or stompbox is active or not. The advantage is that the dim LEDs will give you a clear view on your floorboard at any time, even on a completely dark stage. You will never again have problems finding the correct button while all stage lights are off.

A second possibility is to use a *dim* LED to indicate that a preset is linked to that switch. Some banks in your setup might use only part of the switches. With this setting, you immediately see which switch doesn't have any preset or effect linked to it: it's useless to click any of those switches with LED *off,* because they will send no MIDI messages at all.

A last possibility is to use a *dim* LED to indicate a non-activated stompbox. This is a convenient way to show the difference between stompbox switches (with *dim* LEDs) and patch switches (with *off* LEDS). As you will learn later, you are able to specify for each patch separately which stompboxes are available and which aren't. This will immediately reflect in the LED states : a "non-available" effect will have its LED off, while an "available" but not activated effect will have its LED dimmed.

*See chapter 9.11 for setup of different LED behavior options*

### 3.2.2 Extra functionality for the switch LEDs

One convenient extra feature which reuses the switch LEDs, is the metronome and tap tempo functionality. Basically, the Little Giant contains a built-in customizable metronome, which uses one or more switch LEDs to show a short flash on each beat.

*Chapter 9.12 covers setup of the metronome and tap tempo functionality*

Apart from that, you can also indicate any customizable "state" of your rig by blinking a certain LED with a programmable blinking speed. Some general control commands can be added to a preset message stream in order to control blinking of each of the LEDs. You will learn everything about this powerful concept of "control commands" in later chapters.

*The "BlinkLED" command is one of many GORDIUS commands and is covered in chapter 10.17*

### *3.2.3 Indicator LEDs*

The Little Giant contains a number of square indicator LEDs :

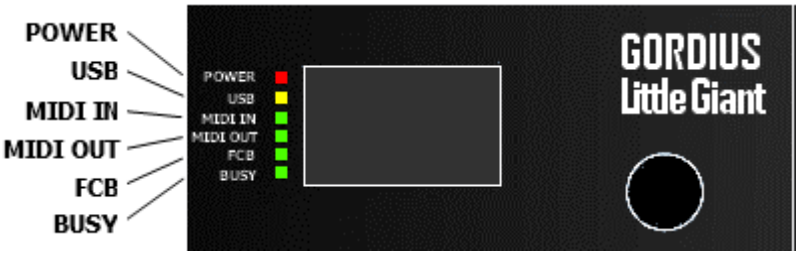
- the red power LED is on whenever the unit is switched on and receives power (from the connected power adapter or by phantom powering through one of the MIDI cables)

- the yellow USB LED indicates if the USB connection is being used. The LED goes on as soon as the computer detects the USB connection, and goes off when the cable is disconnected. It doesn't indicate any USB data traffic, nor does it indicate an established high-level connection between LG2 and ControlCenter for instance. It just indicates that a USB cable was detected by the operating system.

- the MIDI IN and MIDI OUT LEDs flash as soon as there is any activity on the MIDI IN or MIDI OUT ports. You can optionally disable these LEDs, for instance in case there is constant activity due to ActiveSense or MIDI Clock messages.

- The FCB LED goes on as soon as a supported slave controller is detected on the FCB controller ports. After connecting the MIDI cables between slave controller and LG2, don't forget to enable use of a slave controller in your LG2 setup. Only after that the 2 devices will start talking to each other and the FCB LED will go on.

- The busy LED flashes whenever a patch download or firmware download is in progress. It also shows the metronome beat when metronome or tap tempo functionality is being used.



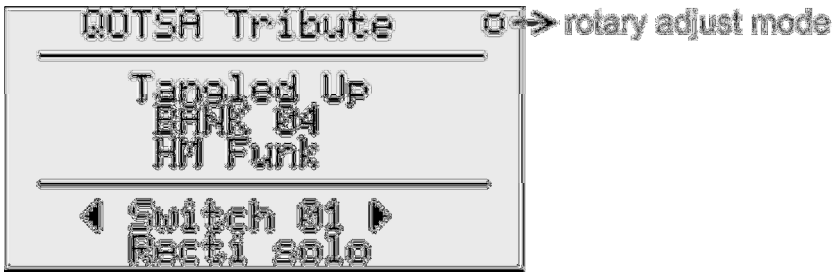

*Little Giant indicator LEDs*

## 3.3 Using the rotary knob as MIDI controller

The rotary knob of the LG2 is essential for browsing through menus and selecting the preferred display mode, as explained in the next topics. However, an interesting extra feature is that this same knob can also be used as a continuous MIDI controller. Similar to expression pedals, the knob can be used to control any “continuous” MIDI parameter like volume, wah, pitch bend, or any other MIDI CC based sound parameter adjustment. An obvious example is to use the rotary knob as a master volume knob for instance.

*Chapter 9.14 will explain the creation of expression pedal setups. Any of these setups can be assigned to the rotary knob for continuous control, just like you do for the expression pedals connected to the LG2 stereo jacks.*

In order to activate the assigned rotary adjustment, you need to put your unit in “rotary adjust” mode. This is done by clicking the rotary button until a hollow circle is shown in the right upper corner. Once this mode is selected, turning the rotary knob will do the assigned MIDI control.



## 3.4 The graphical OLED display

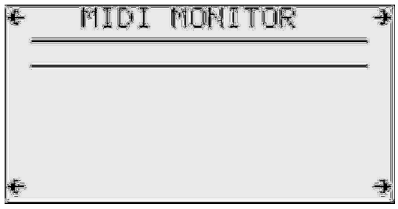
As opposed to standard character based displays, the graphical display of the LG2 allows for variable font sizes. As a result, lots of information can be displayed on the screen while doing a setup using the built-in menus, while bigger size characters can be used in “runtime” mode, making the info clearly visible even when standing on a certain distance from the controller.

The Little Giant features a number of different display modes, which are covered in the next topics. You can choose the display mode which fits your needs best during live use. Your preference is automatically stored in the units permanent memory, so that it starts up in this mode next time you power on the device.

Changing display mode is done with the rotary knob :

- Click the rotary knob until “display mode selection” is active. This is marked by showing four small arrows in the four corners of the display.

- Now you can rotate the knob to scroll through the different display modes. When the desired display mode is active, click the rotary knob again in order to confirm the selected mode.




*4 arrows indicate*
*display selection mode*

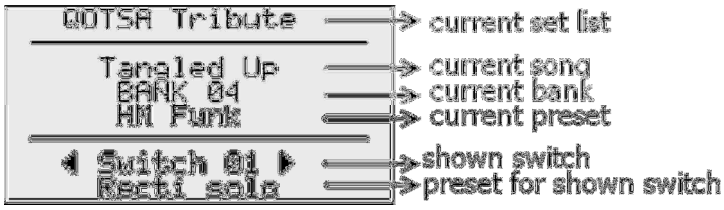
A second way to change display mode is by programming one of the footswitches to act as a display select switch. In order to do so, you can link a preset to the footswitch, and add the GORDIUS specific “DisplayMode” command to the message stream of that preset. You can either select a certain display mode with a footswitch, or you can use one or two “scroll” switches, which scroll through a list of desired display modes.

*More info about the GORDIUS “Display” commands in chapter 10.15 .*

In the next topics we will discuss the different available display modes.

### 3.4.1 Details display

The details display gives you an overview of the currently active setlist, song, bank and preset. Additionally, you can use the rotary knob to scroll through all switch assignments for the current bank. Doing so does not select any of those presets, it just shows the name of the preset linked to each switch.




*"Details" display mode*

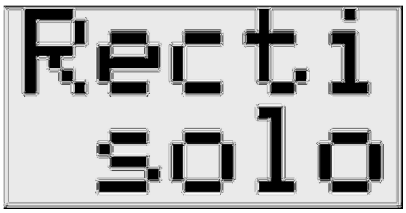
### 3.4.2 Bank & Preset display

In "Bank & preset" display mode, the current song name, or optionally the current bank name, is displayed on the top half of the screen, spread over 2 lines. The lower half of the screen shows the currently selected preset within that bank. A big font size is used in order to have good readibility when standing in front of the floorboard.

*"Bank & Preset" display mode*

### 3.4.3 Preset XL display

If you prefer to see the preset name in very big characters, this is the mode to use. It takes advantage of the graphical nature of the display, which enables the use of custom font sizes. This mode displays the name of the currently selected preset in very big size characters. It shows the first 10 characters of the name, spread over 2 rows of 5. While browsing through banks or songs, the bank or song name is displayed instead, until you again select a new preset.




*"Preset name" display mode*

### *3.4.4 Setlist & Setlist XL display*

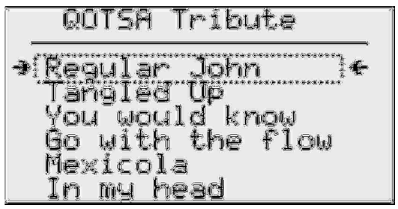
*Attention:* these display modes are avaibable only in case you have created at least one setlist in your setup.

In setlist display mode, you can scroll through the songs of the currently active setlist using the *up* and *down* footswitches, or by turning the rotary knob. The display shows you the currently active setlist, the current song is framed with a dotted line, and the bank linked to that song is automatically activated.

Through the global setup of Control Center, it is possible to customize the way you browse through setlists. You can choose to use the *up* switch of the foot controller to move to the next song (similar to the classic browsing through banks: up = next bank). This might seem illogical when thinking about a real setlist, where you actually browse through the list from top to bottom. Therefore, you can also choose to use the *down* button for proceeding to the next song.

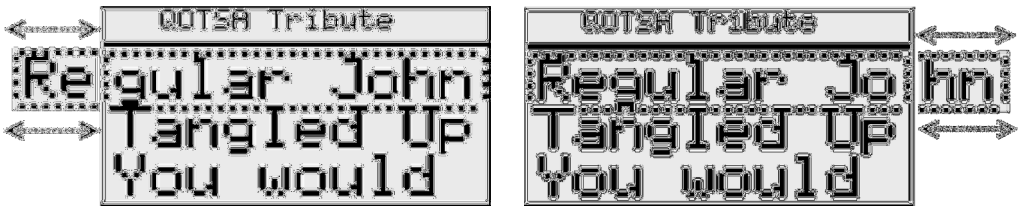
Also, a few options are available to choose what to do when reaching the last song of a setlist. You can block any further scrolling, or you can move to the first song of the list again.

*See chapter 9.9 for setup of the different setlist browsing options*




*"Setlist" display mode*

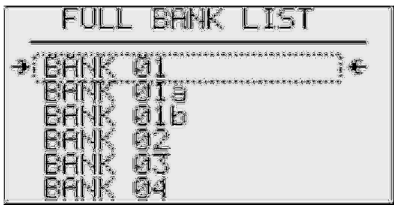
As the name suggests, the "Setlist XL" display mode is exactly the same as the previous one, except that the font, used for displaying the song names, is doubled in size. This mode might be more convenient when using the Little Giant as floorboard, while the smaller font is optimal when the LG is used as desktop controller. In standard font size, up to 8 songs of the setlist can be displayed, while the XL mode still shows 4 songs in the list. This allows you to see at all time what's next in your setlist. If the current song name is longer than 8 characters in XL mode, it will automatically scroll back and forward, in order to display the full name (maximum 16 characters wide) in large font.



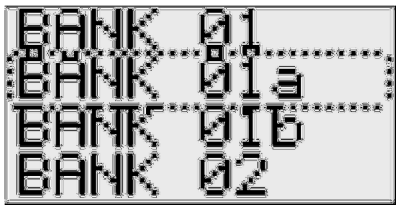

*"Setlist-XL" display mode*

### *3.4.5 Banklist & Banklist-XL display*

When you don't wish to use the functionality of songs and setlists, you still have a similar concept of banklists available. As soon as you have defined at least one banklist, and you have marked it as the "default" list to be used, it will be displayed in banklist display mode, and you can use the up/down switches to scroll through all banks of that list. Just like with setlists, you can also use the rotary knob to browse the list, and you have a few options in the global setup of your controller to finetune the list browsing behavior.




*Banklist display mode*

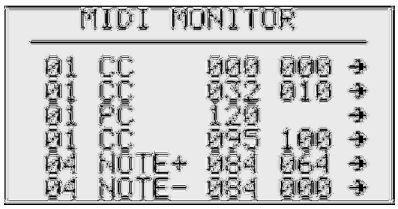



*Banklist-XL display mode*

### *3.4.6 MIDI monitor display*

This is a more advanced view, which shows a list of all the MIDI traffic going through the Little Giant MIDI IN and OUT ports. A pretty detailed knowledge of the MIDI standard and its messages is helpful in order to analyze the content of the diagnostic display, but it can also be used to merely check if any messages are entering or leaving the Little Giant

Always keep in mind that the messages shown in this monitor view are the messages which are actually passing through one of the MIDI ports. An arrow at the left side of the message line indicates an incoming message, an arrow at the right side indicates an outgoing message. If messages are sent to the USB port only, nothing will appear on the built-in MIDI monitor screen. In order to inspect MIDI messages sent to the computer through its the USB connection, you can use any software based MIDI monitoring tool.




*MIDI monitor display mode*

## 3.5 The Little Giant built-in menus

Each aspect of a Little Giant setup can be configured using the LG2 Control Center editor (which is the most convenient way to do so) or using a local setup menu structure. The latter is more labor intensive, but it allows you to do late minute changes on any part of your setup, without the need for a computer. This chapter will give an overview of the different menu types you will encounter, and how to enter data or make selections in those menus.

### 3.5.1 Navigating the menus

Menu navigation is very straightforward. While in *runtime mode* (the mode in which the Little Giant starts up), press the rotary knob for more than 1 second to enter *setup mode.* The main menu is displayed. Turn the rotary knob clockwise to scroll down the menu list, turn counter clockwise to scroll back up. Press the rotary knob to select a menu item. When scrolling past the last menu item, you reach the toolbar at the bottom of the menu, which in many cases contains nothing but a *back* icon. Select this icon to go one step up in the menu structure. When selecting the *back* icon in the main menu, you leave *setup mode* and return to *runtime mode*. All changes are automatically saved.

It is also possible to leave the setup and return to runtime mode from any place within the menu structure hierarchy, by keeping the rotary knob pressed for more than one second. Also in this case, all setup changes are automatically saved.

*Example of a menu with back icon*

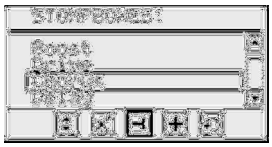
During setup, no MIDI messages are received or sent by the Little Giant. It is also good to know that no USB communication is active while in setup mode. Therefore, it is important to leave setup mode before launching LG2 Control Center and initiating communication with the Little Giant.

*Remark :* if you are worried about possibly activating the setup mode by accident while playing live, you can optionially lock the rotary knob. In this locked mode, keeping the knob pressed is not enough to enter setup mode. You need to keep both up and down switches pressed, along with the rotary knob, before the unit enters setup mode. In other words, you will need to use both hands, and therefore you will never trigger setup mode by accident.

*See the "Locks" topic in chapter 9.9 for configuration of this feature*

### *3.5.2 Managing lists of items*

The Little Giant setup manages many different types of items: patches, two-state effects, expression pedals, banks, songs etc. There is a list menu for each item type, showing the complete list of created items of that type.



*Example of a list menu*

After selecting one item in the list, the toolbar shows following icons:

*MOVE :*

click this icon to move the selected item up or down the list.

*DELETE :*

permanently deletes the selected item, after confirming the deletion.

*EDIT :*

opens the property menu for the selected item, which enables you to modify any of the item properties

*ADD :*

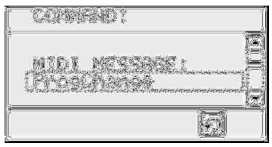
adds a new item below the selected item. All properties of the new item have default values, which can be edited afterwards by clicking the edit icon (the newly added item is immediately selected by default)

*RETURN :*

click this icon to deselect the currently selected item and return to the list menu, where another item can be selected.

### 3.5.3 Property menus

When clicking the edit icon for a selected item, its property menu appears. Use the rotary knob to scroll through all the available properties for the item, click a property value to edit it, or scroll down until the *back* icon is highlighted to leave the property menu again.



*Example of a property menu*

### 3.5.4 Editing string properties

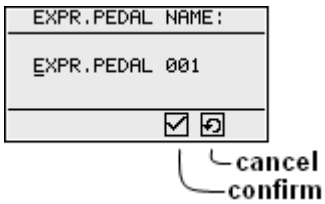
Most items in the Little Giant setup can be given a custom name, which can be any string with a length of up to 16 characters. Although there is no doubt that you will prefer to do this kind of setup using the LG2 Control Center, it is also perfectly possible to use the built-in string editor menu for this. In the string edit menu, turn the rotary knob to go to the character you want to edit. Press the knob to select it, and again turn the knob to choose the desired character. Press to confirm, and the cursor advances to the next character. The string editor menu has the possibility to undo the latest changes. In order to do so, the toolbar contains both a *confirm* and a *cancel* icon. When selecting the *Cancel* icon, all recent changes in the current string will be undone.

While in character select mode, you can scroll through all available characters listed below. At the end of the character list, two special characters are added:

- deletes the current character and moves all succeeding characters 1 position to the left
- inserts a space at the current position and moves all succeeding characters 1 position to the right

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ
aäàåbcdeèéfghiìjklmnoöòpqrstuüùvwxyz
0123456789 _…',.:?!()[]#%&*+-/<=>@
```

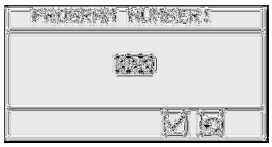
*List of all available characters*




*Example of a string editor menu*

### *3.5.5 Editing numeric properties*

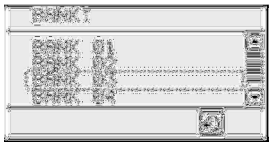
Editing numeric properties is straightforward: select the numeric value and scroll up or down to modify it. The menu automatically sets the upper and lower limits applicable to the current context. The numeric editor has the same *undo* functionality as the string editor: both a *confirm* and a *cancel* icon are available. So keep in mind that the “curled arrow” icon in this kind of edit menus stands for *cancel*, while in navigation menus it is a *return* button.



*Example of a numeric editor menu*

### *3.5.6 Single item selection*

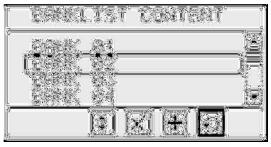
In some cases, filling in a property is done by selecting an item from a list. For instance, each song has a *bank* property, which denotes the bank activated when selecting this song. When editing the *bank* property of a song, a list of all available banks will be shown, and you will be able to use the rotary knob to pick one item from the list. To go back without selecting any item, just click the *return* (or *cancel*) icon instead. You will see this kind of selection menu for editing all "single item properties" throughout the setup.



*Example of a “single item selection” menu*

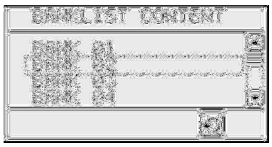
### *3.5.7 Multiple item selection*

Some item properties consist of a list of subitems. For instance, each banklist contains a number of banks. When editing the *"content"* property of a banklist, the current banklist content will be shown, and you will be able to add more banks, remove banks from the list, or change the order of the banks. Adding, moving and removing items is done using a toolbar, which looks very similar to the toolbar for list menus (it just doesn't contain the item edit button) :

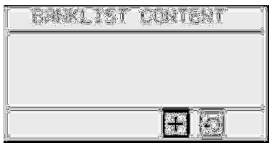



*Example of a multi-selection menu*

When editing a property which contains a list of items, 1 item in the list needs to be selected before the "move / remove / add / return" toolbar appears. So if you want to add an item, first select the preceding item, and then click the "add" icon. If you want to add an item at the top of the list, just add it after the first item, then move it 1 place up. Whenever the initial list is still empty, an "add" icon is always available for adding the first item to the list.



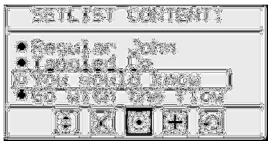

*This is what a "multiple item" menu looks like before any item is selected*




*and this is what it looks like before any item is added*

### *3.5.8 Toggling the state of listed items*

In one specific case you can toggle the "state" of an item within a list :
a setlist contains a list of songs. For each song, you can define if the song will be *played* or *skipped*. In this case, the toolbar contains an extra *toggle* icon. Toggling a song in a setlist between "played" and "skipped" is easy: select the item and then click the *toggle* icon. The item is marked with a filled or hollow circle to denote its current state.



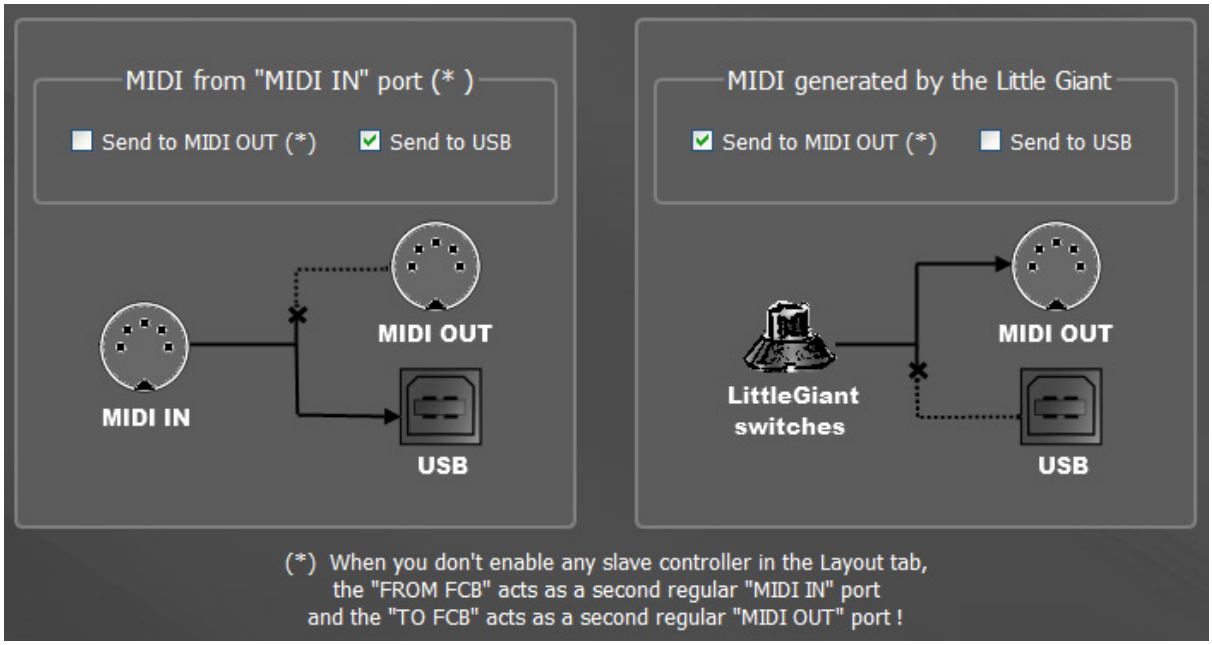

*Example of the toggle option to skip one or more songs in a setlist*

# 4 USB and MIDI routing & filtering

## *4.1 USB and MIDI routing*

The Little Giant gives you different options to route MIDI messages through its MIDI ports and/or USB connection. The “Routing” tab of LG2 Control Center is the place to configure these options. When the LG2 is *not* configured to use a slave controller, the 2 ports “FROM FCB” and “TO FCB” are used as regular MIDI ports. In that case “FROM FCB” can be considered “MIDI IN 2”, and “TO FCB” actually becomes “MIDI OUT 2”.

Routing


MIDI from "MIDI IN" port (* )
Send to MIDI OUT (*)
Send to USB
MIDI IN
MIDI OUT
USB
MIDI generated by the Little Giant
Send to MIDI OUT (*)
Send to USB
LittleGiant switches
MIDI OUT
USB
(*) When you don't enable any slave controller in the Layout tab, the "FROM FCB" acts as a second regular "MIDI IN" port and the "TO FCB" acts as a second regular "MIDI OUT" port !

*MIDI routing setup in LG2 Control Center*

Incoming MIDI can be forwarded to USB, to the MIDI OUT connector(s), or to both. The messages on the MIDI IN connector are forwarded to Port 1 of the USB-MIDI interface, while the messages on the “FROM FCB” are forwarded to Port 2 of the USB-MIDI interface. Also the messages generated by the LG2 itself can be sent to the MIDI OUT connector, to Port 1 of the USB-MIDI interface, or to both.

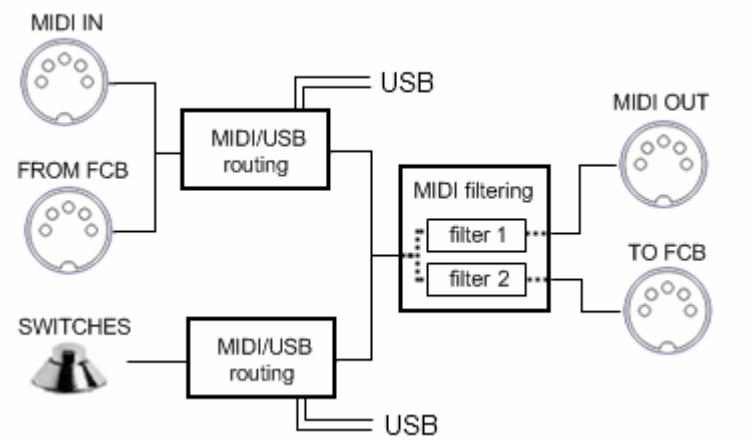
*Remark :*
Disable forwarding of incoming MIDI messages if this has a chance to cause a MIDI loop - that is: if the forwarded MIDI messages can reach the sending device again, by being propagated through the MIDI chain. A MIDI loop can cause your whole MIDI rig to become highly unstable.

The internal menu for configuring MIDI routing can be found here :

`MAIN MENU > Global Settings > MIDI routing`

## 4.2 MIDI message filtering

Some MIDI filtering functionality is available in the Little Giant. This is particularly useful when using both MIDI OUT ports of the LG2. In that case, the MIDI filters can divide the MIDI messages over the 2 outputs in an intelligent way.

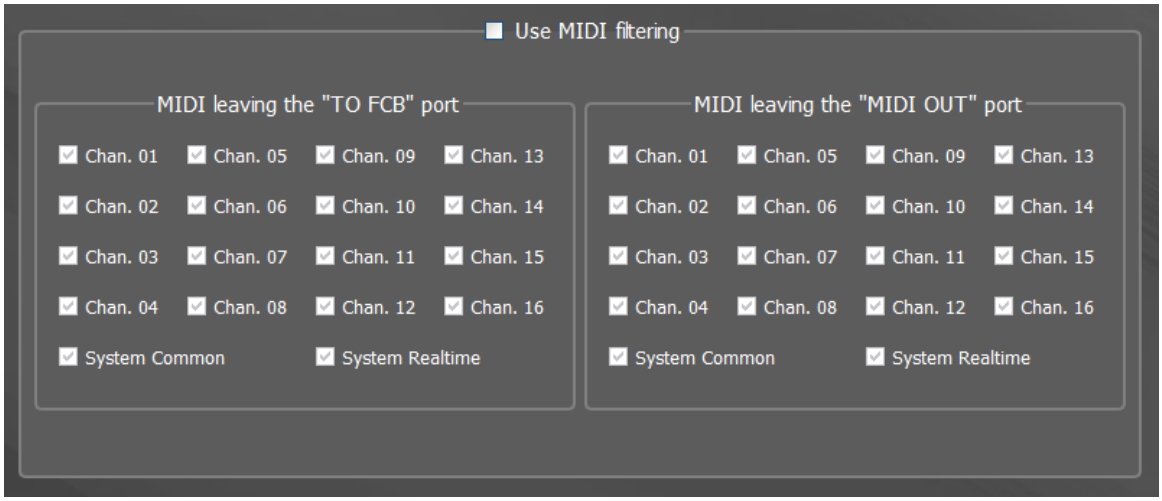



*MIDI filtering, in case of using 2 MIDI OUT ports*

As shown in the diagram above, 2 independent MIDI filters can be activated, one for each of the 2 MIDI OUT ports. All MIDI messages are running through the filters, and you can choose to filter out a subset of these messages to be forwarded to each of the OUT ports. The filtering is done based on the MIDI channel of the messages: any of the 16 channels can be blocked or allowed on each of the 2 ports. Also System Common or System Realtime messages can be optionally blocked or passed.

The “Filtering” tab of LG2 Control Center is the place to configure these options.

Filtering


Use MIDI filtering
MIDI leaving the "TO FCB" port
Chan. 01 Chan. 05 Chan. 09 Chan. 13
Chan. 02 Chan. 06 Chan. 10 Chan. 14
Chan. 03 Chan. 07 Chan. 11 Chan. 15
Chan. 04 Chan. 08 Chan. 12 Chan. 16
System Common System Realtime
MIDI leaving the "MIDI OUT" port
Chan. 01 Chan. 05 Chan. 09 Chan. 13
Chan. 02 Chan. 06 Chan. 10 Chan. 14
Chan. 03 Chan. 07 Chan. 11 Chan. 15
Chan. 04 Chan. 08 Chan. 12 Chan. 16
System Common System Realtime

*MIDI filtering setup in LG2 Control Center*

Below is an overview of the MIDI messages belonging to the “System Common” and “System Realtime” categories, used in the filter setup. Sysex messages are never filtered.

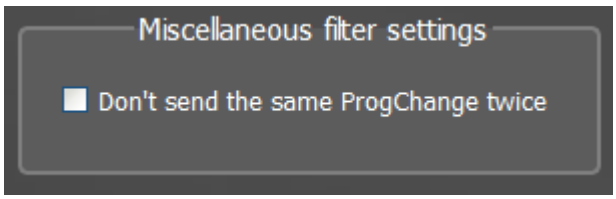
| MTC Quarter Frame |
|---|
| Song Position Pointer |
| Song Select |
| Tune Request |

*System Common messages*

| MIDI Clock |
|---|
| MIDI Start |
| MIDI Continue |
| MIDI Stop |
| Active Sense |
| System Reset |

*System Realtime messages*

There is one additional configuration setting with regards to MIDI filtering :




When clicking a preset switch, a combination of several different MIDI messages can be sent to various devices. Typically, a ProgChange message can be sent to select a certain sound, while some additional ControlChange messages can activate or deactivate effects. When you click the same switch again (for instance in order to revert all effects to their pre-programmed state), the same ProgChange message is sent, and the sound gets selected again. On several devices this may cause an unwanted temporary drop-out of the sound. Therefore, the LG2 has an optioin to filter out all consecutive transmissions of the same ProgChange message. With this setting activated, you can click the same switch several times in a row, only the first click will send a ProgChange message to select the required sound. The following clicks will resend all other messages (like effect activations or TapTempo messages) but the sound will not get reselected.

The internal menu for configuring all MIDI filter options can be found here :

`MAIN MENU > Global Settings > MIDI filtering`

# 5 Expression pedals and external switches

The Little Giant has 4 stereo jack inputs, which can be used to connect expression pedals or additional external footswitches. Each of the jacks can be individually configured to be used for an expression pedal, a single footswitch with mono jack or a dual footswitch with stereo jack.

## *5.1 Expression pedal calibration and configuration*

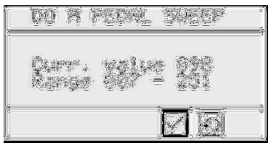
Expression pedals with a wide range of potentiometer resistance values are supported. Therefore a one-time calibration is necessary. This calibration is done using the built-in menus of the LG2. Connect the expression pedal to the jack input. Open the main setup menu by keeping the rotary knob pressed for more than 1 second. First go to the menu

MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Configuration

and make sure the option “Expr.Pedal” is selected, which indicates that an expression pedal is connected to this jack. After that, go to

MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Calibration > Range detect

Now move the expression pedal from totally heel down to totally heel up and back, to let the LG2 detect both the minimum and maximum values of the pedal sweep (order is not important).



*Calibration menu*

*Attention :* the detected range, as displayed in the range detect dialog, should be approximately something like 008 – 250. If your pedal only uses a minor part of the possible sweep range, for instance 160 – 250, this indicates that the “wiring” setting for your expression pedal is currently not correct.

Two different wirings for the stereo jack of an expression pedal are commonly used. Some pedals (amongst which the Roland pedals) have the wiper of the potentiometer connected to the tip of the stereo jack. Other pedals (amongst which the Yamaha pedals) have the wiper of the potentio-meter connected to the ring of the stereo jack. The LG2 jacks can be configured to accept any of both wirings, without the need to use a soldering iron and modify the jack connections. In order to do so, go to following menu :

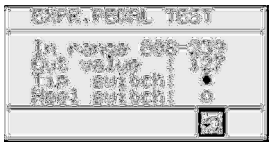
MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Wiring

and choose one of both possible settings : ”Wiper to tip” or ”Wiper to ring”

Once you have the range detect done correctly, you can go to the test screen at

MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Calibration > Test

and again move the pedal to do a full sweep. This time the displayed output value should vary between 000 and 127 , which indicates a calibrated full range. A “virtual footswitch” click should be detected at each end of the sweep, indicated by the hollow circle next to “tip switch” or “heel switch” turning into a filled circle.




*Expr.pedal test screen*

The functionality of “virtual switches” is explained in detail in chapter 9.14. In short, these give you the possibility to trigger any preset as soon as you reach one end of the pedal sweep. While doing the pedal sweep test, you may prefer the tip and/or heel switch to trigger a little sooner. This can be done by introducing a heel and/or tip “engage zone”. The virtual switch will be triggered as soon as you enter this engage zone. Additionally, a small “dead zone” is introduced between sweep and switch engage zone. This allows you to move the pedal through its full sweep, without risking to engage the virtual switch. The actual pedal sweep will be recalculated to run smoothly from 000 to 127 between the 2 dead zones, so you don’t lose any adjustment values (or adjustment resolution) by introducing these dead zones.

Tip and heel engage zones can be configured independently in following local menus :

MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Calibration > Heel deadzone
Tip deadzone

After adjusting, go back to the test screen mentioned earlier, and notice how, after increasing the engage zone, the virtual switch activates earlier when reaching end-of-sweep, while you still keep the full 000-127 sweep range.

A few more options can be configured for expression pedals, again related to the “virtual switch” functionality. You have the choice between using those virtual switches, which trigger when reaching the end of the pedal sweep, or activating a real “auto-engage” function, which triggers the “tip switch” preset as soon as you start moving the expression pedal, and “releases” the virtual switch when you stop moving the pedal.

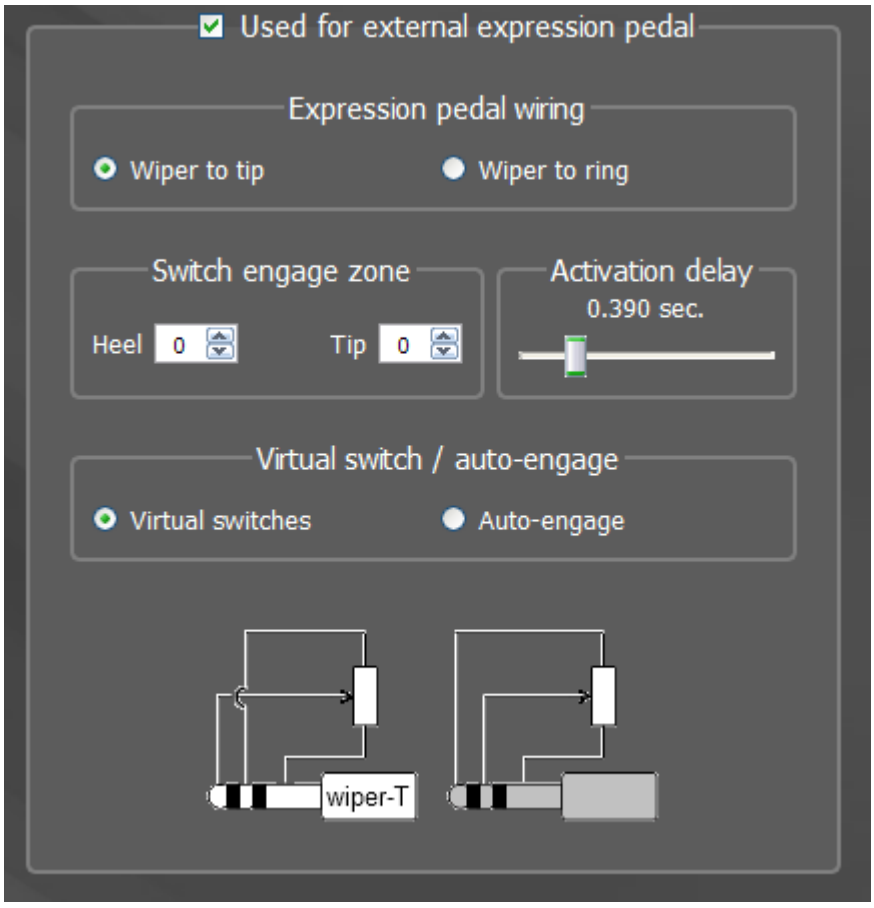
A last configuration parameter in this topic is the activation delay, which can be set to any value between 15 ms and 1.9 sec. When you use the virtual switches, the switch engage delay avoids triggering the tip or heel preset when briefly entering the tip or heel zone. When using the auto-engage function, the delay is rather a “de-activation” delay. While the preset activation message is sent as soon as you start moving the pedal, the de-activation message is sent only after you have stopped moving the pedal for the specified amount of time :

MAIN MENU > Global Settings > Auto-engage
> Type config
> Activation delay

*Hint :* as the name suggests, the “virtual tip switch” is intended to replace the actual footswitch which is mounted underneath some expression pedals. Many may prefer the actual “feel” of a real switch. It lets you do the continuous adjustment until you feel the resistance of the switch, and then an extra push activates the switch. Even when using a real switch this way, you still can take advantage of the “virtual tip switch” functionality, by configuring the “engage zone” as the zone in which the pedal activates the physical switch. The LG2 pedal electronics can then trigger the required preset using “virtual switch” logic, and therefore no extra cable is needed from tip switch to LG2 jack input.

While expression pedal calibration needs to be done using the local LG2 menus, all other expression pedal configuration can also be done in LG2 Control Center. You will recognize all mentioned parameters in the expr.pedal pane of the Jacks tab page of ControlCenter :

Jacks




*Expression pedal setup in LG2 Control Center*

Another important feature for expression pedals, is the possibility to digitally shape the sweep curve of the pedal. This allows you to turn a volume pedal (with log pot) into a linear expression pedal, or use an expression pedal with linear pot for (logarithmic) volume adjustment.

Since the sweep curve of a pedal can be configured differently for each selected preset, its configuration is not part of the global config discussed here, but it is part of the “expression pedal setups” which are covered in a later chapter.

*See the last topic of chapter 9.14 about defining sweep curves for your expression pedal*

***Remark about volume pedals***

In most cases volume pedals, as opposed to expression pedals, have 2 separate jacks: an input and an output jack. They are designed to accept an audio signal (an instrument cable), attenuate the audio signal directly, and send the attenuated signal to the output jack. In order to use this type of pedal as an expression pedal, the use of an Y-shaped insert cable is required.

## *5.2 Connecting external switches*

When configuring a jack input to accept a mono or dual footswitch, these external switches can be used in exactly the same way as the ”internal” configurable preset switches of the Little Giant. Presets can be linked to those buttons in the bank setup, which is discussed in a further chapter. Typically these external switches can trigger some global functions like TapTempo, Mute or Tuner, a MIDI “panic” button, etc. Alternatively, you can configure a set of switches to act like an extra pair of up/down switches, or D1/D2 switches. The latter can free up 2 preset switches on the LG2, or can add Direct Bank functionality to an FCB1010 + LGM2 setup, which doesn’t offer Direct Bank switches by default. Up to 8 external switches are supported in an LG2 setup.

Change the jack configuration from its default “expr.pedal” setting to “mono switch” or “dual switch” using the following internal menu :

```
MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Configuration
```

When a jack is used to connect external switches, no calibration is needed as with expression pedals. On the other hand, the internal LG2 menu does offer a test screen which can be handy to check if the switch presses are correctly detected. One or two hollow circles change into filled circles when a footswitch activation is detected. This test screen can be found here :

```
MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Test
```

*external switch test screen*

Similar to expression pedals, a number of different wiring options are supported for stereo switches : the common lead of the 2 switches can be connected to the stereo jack sleeve (which is the most common situation), to the jack ring, or to the jack tip. If the switch test fails, selecting one of the alternative wirings is likely to solve the problem.

Two types of momentary switches are supported : “normally open” switches (which are by far the most common) or “normally closed” switches.

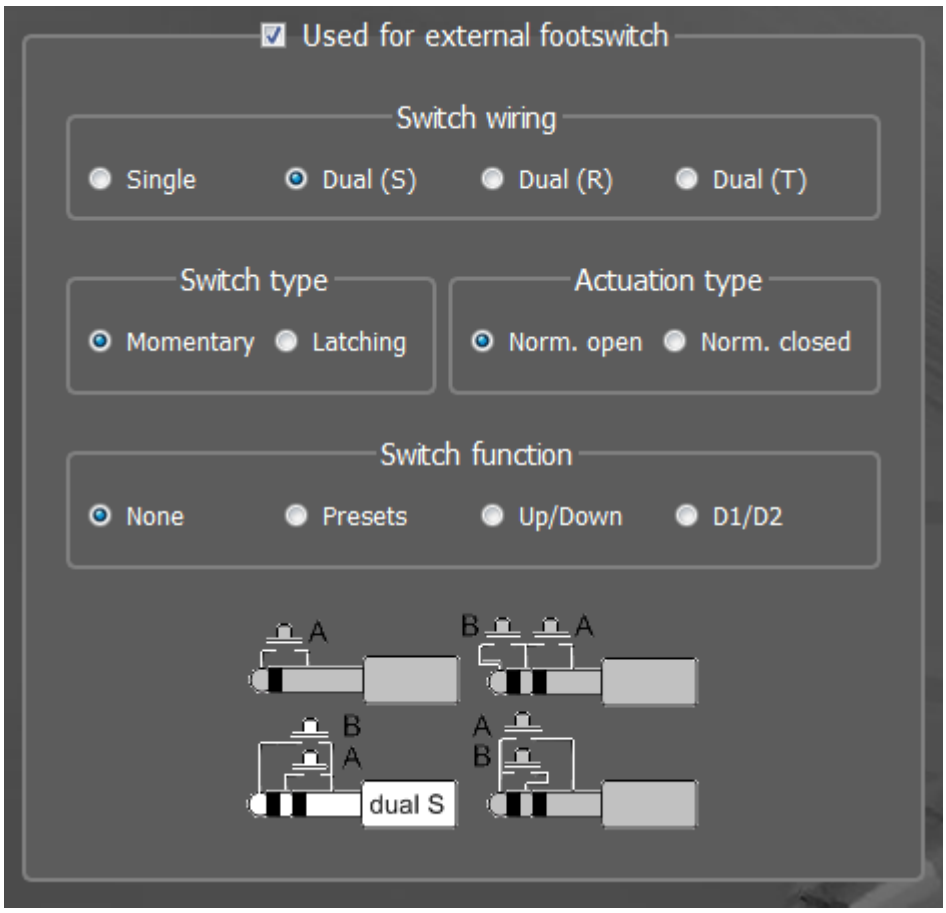
The LG2 also offers support for latched switches, as opposed to momentary switches. Such switches have 2 distinct states (open or closed) and in most cases have a built-in LED which shows their current state. The LG2 can map these states to the activated / deactivated state of an effect.

The configuration options mentioned above can be set up through the same local menu :

```
MAIN MENU > Global Settings > Jack config >
Jack 1 (2,3,4) > Wiring
                 Switch type
                 Switch function
```

External switch configuration can also be done in the Jacks tab of LG2 Control Center :

Jacks




*External switch setup in LG2 ControlCenter*

# 6 Connecting slave controllers

## *6.1 The principle*

The Little Giant has 2 dedicated MIDI ports for connecting one or more additional slave controllers. A slave controller adds extra switches to the layout, offering more direct access to a large number of presets, at the cost of having a bigger footprint on stage. While for the LG2 or LGX2 floorboards the slave controller can be an optional add-on, for the LGM2 module it obviously is an essential part of the floorboard setup.

A few popular floorboards are supported as Gordius slave controller :

- Behringer FCB1010
- Roland FC-200
- Roland FC-300

Why only those models? Because the Little Giant (module) needs full control over the LEDs of the floorboard in order to show the current state of presets and effects. With the FCB1010, this control is offered by a GORDIUS specific firmware EPROM, which is shipped along with the LGM2 module (and can be obtained on request when ordering an LG2 or LGX2). The Roland floorboards have a native "SysEx mode" which allows full external control over LEDs and character display. In all cases, there is no need for any programming on the slave controllers themselves. They all work in a "dummy" mode, forwarding switch clicks to the LG2 engine, and thus triggering LG2 presets. All setup is done in the Little Giant, and the slave controller doesn't put any restriction on the LG2 capabilities.

The FC-300 offers the additional advantage of an on-board 2x16 character display. The LG2 can take control over that display, and use it to show song, bank, and preset names.

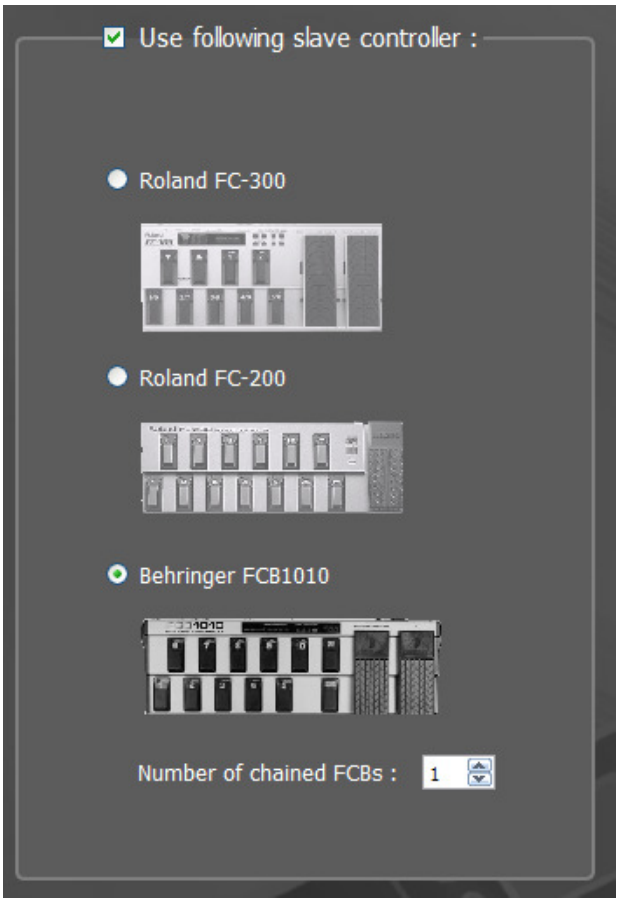
*LittleGiant driving the FC-300 display*

## *6.2 The connections*

In order to establish 2-way communication between slave controller and Little Giant, 2 MIDI cables need to be connected: 1 between MIDI OUT of the slave controller and "FROM FCB" on the LG2, and 1 between "TO FCB" of the LG2 and MIDI IN of the slave controller.
As mentioned in
Appendix B : Little Giant MIDI connector configurations, it is possible to configure the 7-pins "FROM FCB" connector to carry 2-way communication along with phantom power. This would allow using a single MIDI cable between slave and LG2. However, there are currently no slave controllers available which are compatible with such wiring. This option is intended to be used in future GORDIUS slave controllers. If you intend to customize your FCB1010 to support 2-way communication and phantom power through a single cable, the appendix provides more info on how to wiring should be done.

You enable use of a slave controller in the first tab of LG2 ControlCenter :

Layout




*Slave controller setup in LG2 Control Center*

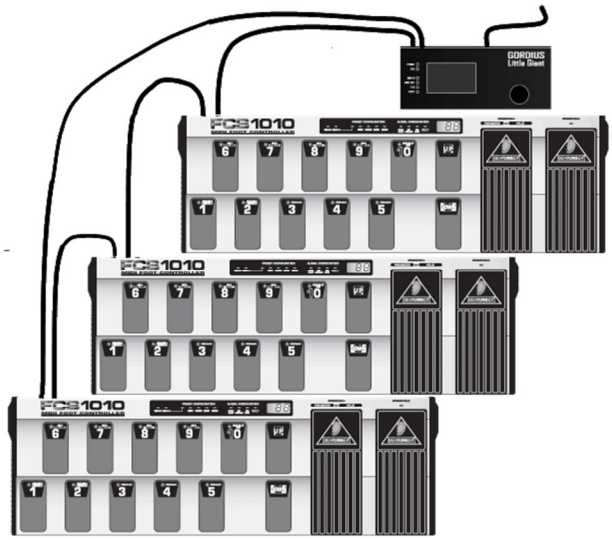
In the local LG2 menus, you can configure this here :

`MAIN MENU > Global Settings > Slave controller`

When you activate the use of a slave controller, the “FROM FCB” and “TO FCB” ports will stop acting as general MIDI ports, and will initiate a specific communication protocol between slave controller and LG2. As soon as the MIDI connections are made, both slave controller and LG2 are powered, and the LG2 is set up for using a slave controller, the square indicator LED on the LG2 labeled “FCB” will turn on, and – in case of using an FCB1010 – the FCB display will change from “- -“ to “01”, which is the “index” of the floorboard. See next topic for more info about the floorboard index.

## *6.3 Connecting multiple slave controllers*

It is possible to use up to 3 FCB1010 slave controllers at the same time, along with the LG2. This offers you an impressive number of footswitches : 30, 40 or 53 switches for each bank for the LGM2, LG2 or LGX2 respectively. (On top of that you can add up to 8 external switches, connected to the 4 LG2 input jacks) The picture below shows how these slave controllers can be chained together :




*Chaining 3 FCB-1010 units as slave controller for an LGM2*

In this scenario of chaining multiple FCBs, you need to give a unique index (from 1 to 3) to each FCB. This can be done by keeping 2 switches pressed during startup of the FCB :

- Pressing key 1 + 6 during startup gives the FCB index #1
- Pressing key 1 + 7 during startup gives the FCB index #2
- Pressing key 1 + 8 during startup gives the FCB index #3

Your aim of using multiple slave controllers might be to access the same identical functionality on several places on stage. In this case you may decide to assign the same index to 2 FCB1010 slave controllers. This way both floorboards are just duplicates, which trigger exactly the same presets at all time.

## 6.4 Switch mapping for the FCB-1010, FC-200 and FC-300

The switch labeling of the FCB-1010 is very straightforward: you have 10 footswitches labeled 1 to 10, and a pair of up/down switches. In the bank setup of LG2 ControlCenter, which is covered in detail in a further chapter, you can assign any preset to slave switch 01 to 10. In case of using an LG2 or LGX2 floorboard, the up/down switches of the FCB-1010 are simply duplicates of the "internal" up/down switches. This means that you can use any of the available up/down switch pairs to scroll through the extended banks or songs. For instance in case of the LG2 + FCB1010, clicking *Up* or *Down* will load a new 20-switch bank layout.

The switch layout of the Roland FC-200 is very similar to the FCB-1010. It also has 10 preset switches and a *bank up* and *bank down* switch. However, the FC-200 has one extra "CTL" switch. This one is used as "Direct1" switch here: it activates or deactivates Direct Bank 1 (Direct bank functionality is covered in chapter 9.17).

The switch layout of the Roland FC-300 is somewhat different: it has only 5 preset switches. Apart from the *up / down* switches, 2 "CTL" switches are available, which are used as Direct1 and Direct2 switches.

## 6.5 Expression pedal mapping for the FCB-1010, FC-200 and FC-300

An LG2 setup has support for up to 8 expression pedals. Expression pedal 1 to 4 are linked to the stereo jack inputs of the LG2. Additional expression pedals can be added through the use of one or more slave controllers. In that case, the expression pedal numbering is as follows :

*FCB-1010* #1 :
Expression pedal A = expr.pedal 5
Expression pedal B = expr.pedal 6

*FCB-1010* #2 :
Expression pedal A = expr.pedal 7
Expression pedal B = expr.pedal 8

*FCB-1010* #3 :
Expression pedal A = expr.pedal 1
Expression pedal B = expr.pedal 2
( the expr.edals of the third slave controller will duplicate the function of the expr. pedals connected to jack 1 & 2 of the LG2.)

*FC-200* :
Internal expression pedal = expr.pedal 5
6 stereo jacks = expr.pedal 6-8, 1-3

*FC-300* :
Internal expression pedal A = expr.pedal 5
Internal expression pedal B = expr.pedal 6
3 stereo jacks = expr.pedal 7,8,1

# 7 Remotely controlling the Little Giant

## *7.1 Remotely selecting songs, patches, etc*

Apart from the “full fledged” slave controllers, discussed in previous chapter, it is also possible to remotely control the Little Giant from any external MIDI controller, which can send simple MIDI ControlChange or ProgChange messages. Connect this type of controller to the MIDI IN or FROM FCB port of your LG2, and you can activate LG2 songs, banks, presets, etc… directly from that controller.

Following remote control commands are available :

CC MSB / LSB :
CC 17 / CC 49 = activate setlist
CC 18 / CC 50 = activate banklist
CC 20 / CC 52 = activate song
CC 21 / CC 53 = activate bank
CC 24 / CC 56 = select patch
CC 25 / CC 57 = select trigger
CC 26 / CC 58 = set 2-state effect ON
CC 27 / CC 59 = set 2-state effect OFF
CC 28 / CC 60 = activate momentary effect
CC 29 / CC 61 = deactivate momentary effect

For more info about the different setup items mentioned here, we refer to chapter 8, which covers the LG2 setup structure. The LG2 setup supports up to 1000 items of each type. Therefore, the remote control command needs to specify an item index from 0 to 999. Since MIDI commands only support a 7-bit data range of 0-127, we use the same principle as the MIDI “Bankselect” principle: all items are divided in groups of 128. As long as you stay within the same group, you can activate any of the 128 elements of that group with a single ControlChange message. When you want to access an element from another group, you first send an “MSB” (most significant byte) ControlChange message to select the group, followed by a regular “LSB” (least significant byte) ControlChange message to activate the required element within that group. As long as you don’t use more than 128 items of a certain type in your setup, you don’t need to worry about the “MSB” message, and sending a single ControlChange message is sufficient.

For further flexibility, “patches” or “triggers” can also be remotely controlled with a “ProgChange” message instead of a “ControlChange” message :

CC 00 00 till CC 00 07 are MIDI “BankSelect” messages which activate one of 8 patch banks.
CC 00 08 till CC 00 15 are MIDI “BankSelect” messages which activate one of 8 trigger banks.

Each subsequent incoming ProgChange message on the “remote control channel” will activate a patch or trigger from the current “bank”. If you don’t send any CC 00 message, any PC message will activate one of the first 128 available patches in your setup.

*Attention :* don’t get confused. When we talk about patch “banks” here, we mean a bank of 128 successive patches in the list of up to 1000 available patches. As just mentioned, those “banks” are required to cope with the MIDI value range limitation when we want to access more than 128 patches. It has nothing to do with the concept of “banks” known in an LG2 setup.

Similarly, there is an alternative, simpler, way to activate stompboxes:
CC 64 till CC 95 can be used to activate the first 32 stompboxes of your setup. Value 127 activates the stompbox, value 0 deactivates it. As you see, this alternative can only control a subset of all available stomps, but the advantage is that it uses the regular logic of controlling each stomp with a single CC number, and value 127/0 for ON/OFF.

The MIDI channel used for remote control commands is configurable.

*Refer to chapter 9.13 to read about enabling the remote control, and setup of the remote control MIDI channel.*

Next to external "footswitch" controllers, you can also use MIDI enabled "continuous" controllers to remotely trigger a LittleGiant expression pedal setup. Doing so will add all the extended features of those LG2 expression pedal setups (like the digital sweep shaping and so on) to any MIDI-enabled continuous controller. It also allows you to trigger an LG2 "expression pedal" setup with other types of continuous controllers, like ribbon controllers, breath controllers, etc.

Any of the first 8 expression pedal setups in your LG2 can be triggered by an external continuous controller using CC 112 till CC 119

## *7.2 Remotely controlling the LG2 switches*

The previously discussed type of remote control allows you to activate any of the LG2 setup elements (patches, banks, songs…) directly, by specifying the index of that element in the remote control command. A second way of remotely controlling the LG2 is even more straightforward: you can press and release any of the LG2 switches from a distance, by sending a NoteOn/NoteOff MIDI command to the LG2.

Apart from the MIDI channel used for remote control, you can also configure the Note value range used for controlling the LG2 switches. In ControlCenter, you specify the start value of the note range, and counting from that value, you can remotely control the internal switches, external switches, or slave switches of the LG2 / LGX2 / LGM2 using following Note values :

Offset + 00 – 09 (0x00 – 0x09) = internal switches of the LG2
Offset + 00 – 12 (0x00 – 0x0c) = internal switches of the LGX2
Offset + 16 – 25 (0x10 – 0x19) = switches of "slave 1"
Offset + 26 – 35 (0x1a – 0x23) = switches of "slave 2"
Offset + 36 – 45 (0x24 – 0x2d) = switches of "slave 3"
Offset + 48 – 55 (0x30 – 0x37) = external switches (linked to jack 1 – 4)
Offset + 64 – 65 (0x40 – 0x41) = Up / Down switch
Offset + 66 – 67 (0x42 – 0x43) = D1 / D2 switch

A NoteOn message triggers a switch press, a NoteOff message triggers a switch release.
The Note velocity of the remote control commands is ignored, except for velocity value 0 : as specified in the MIDI standard, a NoteOn command with velocity 0 is treated as a NoteOff command. As mentioned before, the MIDI channel used for remote control is configurable.

*Refer to chapter 9.13 to read about enabling the remote control, and setup of the remote control MIDI channel and Note value range.*

Those configuration topics can be found here :

MAIN MENU > Global Settings > MIDI Channels > Ext. Triggering

and here :

MAIN MENU > Global Settings > MIDI Channels > Trigger channel

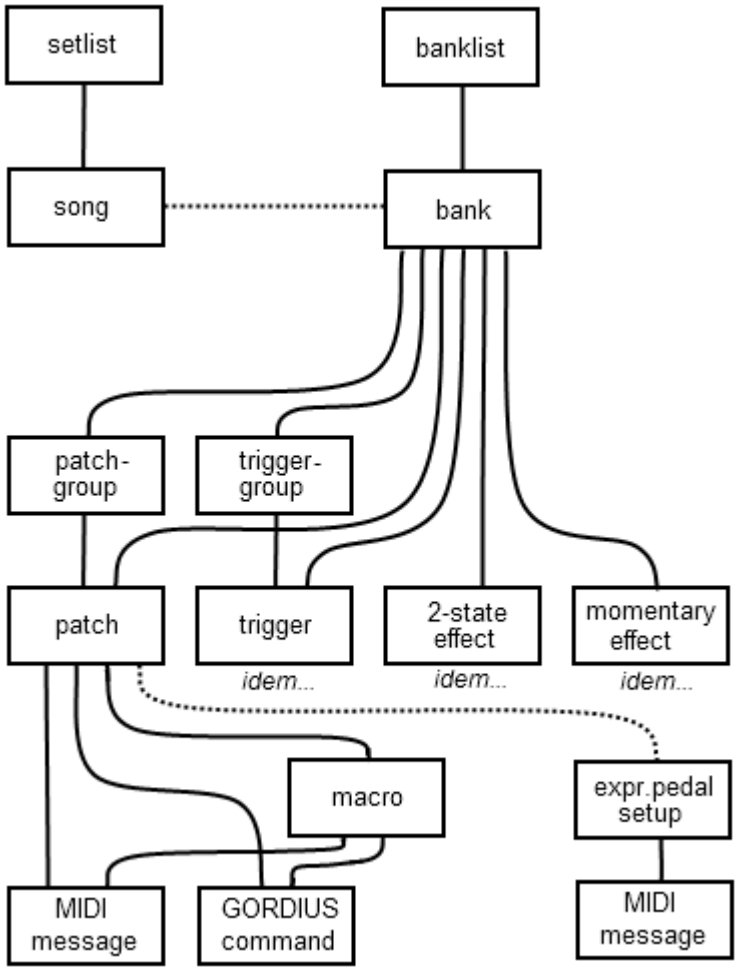
In LG2 ControlCenter, these configuration settings are somewhat hidden. You will find them as part of the “MIDI channels” setup on the Variables tab page :

Variables

*Remote control activation and*
*MIDI channel and Note offset configuration*

# 8 The Little Giant setup structure

## *8.1 Overview*




*the Little Giant setup structure*

The schematic drawing on the previous page gives you a general overview of the different setup elements which form a Little Giant setup. The next topics descibe those setup elements in detail. We will walk through the element hierarchy from bottom to top, starting with the most basic elements.

## 8.2 MIDI messages and GORDIUS commands

The main purpose for a MIDI controller is to send MIDI messages, obviously. You can consider the MIDI message as the most basic (but also the most important) element of an LG2 setup. The end result after creating a full LG2 setup should be that clicking a footswitch triggers transmission of one or more MIDI messages. We can chain multiple MIDI messages in a “message stream”. All messages of a stream will be transmitted in sequence when clicking or releasing a footswitch.

However, the Little Giant is much more than just a regular MIDI controller. It has many advanced features which you will not find in any other controller on the market. These features are implemented by defining a large number of GORDIUS specific “commands”. GORDIUS commands can be added at any place in a message stream, mixed with regular MIDI messages. This is a very flexible way to trigger any of the special features at a specific time during MIDI transmission.

*Chapter 10 contains a detailed reference which covers each of the GORDIUS commands in full detail. Only after reading that chapter you will have a complete view on the capabilities of your Little Giant.*

## 8.3 Macros

While in many scenarios it will be sufficient to send one single MIDI message on each click of a footswitch, the Little Giant also offers the possibility to send a large number of messages with a single click. Therefore it might be convenient to group a set of messages (MIDI messages, GORDIUS commands, or a mix of both), which can then be reused in different parts of your setup. This is where a macro can be used: it creates a reusable set of messages. Doing a change in a macro will immediately effect all places in your setup where the macro is being used. This can be much easier than scanning an extended setup and do the same change on many places.

## 8.4 Patches & triggers, 2-state effects & momentary effects

These four elements are important building blocks in your setup. As you can see on the schematic drawing, the four blocks are drawn next to each other, because they are very similar. When we want to talk about any of those 4 types of setup elements, we talk about *presets* in general. A preset basically bundles a number of MIDI messages and GORDIUS commands, to be transmitted or executed when clicking a switch and/or when releasing a switch. Therefore, a preset has 2 properties: a “first message stream” and a “second message stream”. Each stream can contain any number of MIDI messages, GORDIUS commands, and macros (which are just reusable command sets).

Now what’s the difference between the 4 “preset” types ? They behave differently with regards to :

- activation : how many presets can be active at the same time ?
- LEDs : when is the corresponding LED on or off ?
- Message stream transmission : when are both message streams transmitted ?

***Patches*** can typically be considered “sound select” presets. You use a patch to select a certain sound in your guitar effects module or synth module, etc. Only one patch can be active at the same time. When you have patch A selected, and you click the switch for patch B, LED A will go off and LED B will go on.

***Triggers*** are similar to patches, in the way that no multiple patches OR triggers can be active at the same time. So when you have patch A selected and you click the switch for trigger B, again LED A will go off, and LED B will go on. However, LED B will go off again as soon as you release its footswitch. Therefore you can use a trigger (as the name suggests) for triggering a certain action on a device when you don’t want to see that reflected on your floorboard as an “active preset” with a lighted footswitch LED.

***Two-state effects*** and ***momentary effects*** are two types of “effect” presets. These can typically be activated or deactivated without influencing the currently active patch. Indeed, you can select a certain sound, and afterwards you can add or remove certain effects on that sound.

As the name suggests, a ***two-state effect*** can have two distinct states: on or off. This is the typical behavior of an effect stompbox. Therefore, the term ***stompbox*** is also sometimes used as a shorter name for two-state effect. While the currently selected patch remains active (with its switch LED on), you can activate or deactivate stompboxes. The switch LED of a stompbox will always reflect its current state : on or off..

A ***momentary effect*** does not toggle between 2 distinct states with each foot click, as a stompbox does. A momentary effect gets activated by clicking its footswitch, and gets deactivated again by releasing the switch. Typical example for a momentary effect is a sustain pedal. But you can use this momentary behavior for any type of effect which you want to activate temporarily, while keeping your foot on its switch. The LED of a momentary effect will only be on as long as its switch is being pressed.

We also mentioned already that there are some differences in the way the two message streams get transmitted. The most obvious difference is between two-state effects and momentary effects. For a momentary effect, the effect activation message(s) are transmitted on switch press, and the effect deactivation message(s) are transmitted on switch release. A two-state effect behaves differently: a first click will activate the effect and send its “first” message stream. A second click will again deactivate the effect, and send its “second” message stream. No MIDI is ever sent when releasing the switch of a two-state effect. Patches and triggers will typically send messages only when clicking the switch. In other words, the “second” message stream will remain empty in most cases. However, if you wish you can also trigger some GORDIUS commands or send some MIDI messages on switch release. To do so, just add the commands to the “second” message stream. In short: patches, triggers and momentary effects all have the same behavior with regards to message stream transmission. Only the two-state effect behaves differently and toggles between each of the 2 streams on each switch click.

## *8.5 Expression pedal setups*

The Little Giant has 4 stereo jack inputs for expression pedals. Through the use of slave controllers, there is even support for a total number of 8 expression pedals. Each of these pedals can continuously control volume or one or more sound effects. The use of the pedal can be defined globally, or can be depending on the currently selected preset (which is why we have drawn a dotted line between the expression pedal setup block and the preset block in the schematic drawing).

Since you can define many different uses for the same expression pedal, there can be much more expression pedal setups than the number of connected pedals. A special “ActivateContCtrl” command can be added to any preset message stream in order to modify the pedal behavior on the fly.

## 8.6 Patch groups & trigger groups

These are exactly what the name suggests : a group of patches or a group of triggers. This structure is used as part of a bank setup and as part of a song setup, so we will cover this in the next topics.

## 8.7 Banks

A bank defines a “layout” for the footswitches of your floorboard. It specifies what each of the available switches actually stands for, by linking a preset (or preset group) to each of the switches. You can define a large number of banks (up to 1000) and use the up/down switches to scroll through these banks. As you will see in chapter 9.17 about bank setup, there are some ways to easily define “global” switches, which behave the same in all banks. But if you prefer, each switch can have a different function in each of the banks. More important: also the “type” of switch can be different in each bank, because you can link any type of preset to each switch: a patch or trigger, a momentary effect or two-state effect. This is a big advantage compared to many of the other MIDI floorboard controllers, which offer a fixed switch layout, or only limited variations, with certain rows of switches dedicated to “stompbox effect” or “instant access” switches, and other rows dedicated to preset select switches. The Little Giant lets you choose the layout freely for each bank.

The number of switches in a bank layout depends on the type of controller you use and the connected “peripherals”. The LG2 has 10 programmable switches ( 2 of those can be configured to act as Direct Bank switches, which reduces the number of programmable switches to 9 or 8). The LGX2 has 13 programmable switches (with 2 dedicated DirectBank switches there is no need to reuse any of the programmable switches for that). The LGM2 module doesn’t have any programmable switches of its own. Add to this the switches of a connected slave controller: 5 for a Roland FC-300 and 10 for a Roland FC-200 or Behringer FCB1010. And finally you can also connect up to 8 external switches through the 4 stereo jack inputs. These switches are also fully programmable. If you add all this together, and knowing that you can chain up to 3 FCB1010 slave controllers together, a single bank can contain as many as 51 programmable switches !

The principle of a bank layout is simple: it links a preset to each of the switches. After doing so, clicking a switch will result in the “message stream” of the corresponding preset to be transmitted. We briefly mentioned that it is also possible to link a patch group or trigger group to a switch. In that case, you can use a single footswitch to scroll through several presets sequentially. A very powerful feature which allows you to have extended control with a limited number of footswitches.

Apart from this customizable switch layout per bank, the LG2 offers the possibility to define a “default preset” for each bank. The messages of this preset are transmitted when you select the bank. An easy way to do certain initializations or changes in the controlled devices as soon as you enter a certain bank.

### *Direct banks*

Chapter 9.17, which covers the bank setup, will describe all possibilities of direct banks in full detail. The LG2 and LGX2 have two “Direct bank select” switches D1 and D2. Such a switch gives you one-click access to an extra set of switches. It temporarily replaces the switch layout of the current bank with a “Direct 1” or “Direct 2” bank. In general, you can use this functionality to have easy access to some customizable global functions. However, it is also possible to link different “direct banks” to each “normal” bank. This gives you a lot of flexibility and many different ways to optimize your floorboard to your personal preferences.

## 8.8 Banklists

A banklist groups a number of banks, and allows you to scroll through those banks with the *Up* and *Down* switches of your LG2. Before you can start using your LG2, its setup needs to contain at least one banklist, which is marked as the “default” one. You can create several independent banklists. This allows you to organize your setup in different ways, or even have different independent setups as part of one large setup. Always remember to specify which banklist is the “default” one. Your LG2 will scroll through all banks of that list, and hide all other banks. Simply making a different banklist the default one (a few clicks in the local setup menu) will activate a different set of banks. This allows you for instance to completely change the setup of your LG2 with a few clicks, depending on the current type of gig.

If you prefer to work with songs and setlists (see below) you will probably not make intensive use of banklists. In that case you might create just one “All Banks” list which contains all banks defined in your setup. This will give you an alternative way to access any bank sequentially, instead of scrolling through your current setlist.

## 8.9 Songs

In many live situations, you will use your LG2 while playing a pre-defined setlist. In that case it can be extremely handy to organize your setup in function of that setlist. Each song will probably require a specific set of sounds, effects, tempo indicator, backing tracks, and so on… Therefore in this scenario you will most likely create a specific switch layout for each song. You do this by creating a bank, and then linking that bank to a certain song. This also allows you to reuse the same bank for several songs, which is another frequently used scenario. However, if you really intend to use a different layout for each song, ControlCenter offers the option to tick a checkbox “keep songs and banks synchronized”. This minimizes the amount of overhead for you during setup creation. You can just create new bank layouts, and a corresponding song will be automatically created for you.

Just like with banks, you can also link a default preset to a song, which automatically gets selected as soon as you activate the song. When using songs, you will most probably want to abandon the use of default presets linked to each bank, and start using default presets for each song instead. This allows you to reuse the same bank layout for multiple songs, while still triggering a different default preset.

Let’s briefly mention one more option, which is covered in more detail in chapter 9.18 about song setup: a patch group can be linked to each song. This allows you to define 2 specific switches “next preset” and “prev. preset”, which browse through the specified presets of the currently active song.

## 8.10 Setlists

A setlist groups a number of songs, in the order in which they will be played. You can use the *Up* / *Down* switches to scroll through the currently active setlist. When one or more setlist are defined, and one of them is indicated as the “default” setlist, this list will be loaded at startup of the LG2. Selecting a different setlist can be done through the internal setup menu with a few clicks (just mark another setlist as the “default” one).

In order to allow easy late-minute changes in your setlist, each song of the setlist can be marked as “played” or “skipped”. So if, minutes before a show, you decide to skip a few songs, there is no need to delete the songs from your current setlist, and add them again after the show. Just mark them as skipped, and “enable” them again afterwards, this is very easy to do.

## *8.11 How many presets can I create? How many messages can they send?...*

Before buying a GORDIUS product, you will probably have looked around to find an answer to this type of questions. What are the capabilities and restrictions of a Little Giant setup ?

Apart from adding many advanced features, which make the available functionality of the Little Giant unique in its kind, we also strived to offer enough storage space, and above all use a clever way to access that storage space, in order to omit all practical limitations for building a very extended MIDI setup for your gear. The dynamic way in which each of the setup items mentioned above is allocating storage memory results in the possibility to create a large number of "items". We are talking about "items" in general, because that's exactly what the dynamic memory access is about: each item, be it a preset with all its MIDI messages, a bank with its switch assignments, a setlist with its songs,… each item takes as much memory as it requires. There is no rigid memory structure which results in strict – and limited – specifications like: support for 128 presets, 100 banks, 10 setlists of 20 songs, … No, we shifted the upper limit for each of the elements to a level which should omit any practical limitation. The Little Giant can store :

- 1000 patches
- 1000 triggers
- 1000 2-state effects
- 1000 momentary effects
- 1000 banks
- 1000 songs
- 1000 banklists
- 1000 setlists
- Each preset can contain an "unlimited" number of MIDI messages

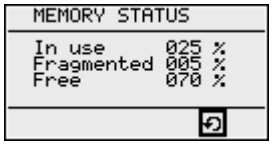
We realize that this type of specification doesn't sound very useful. Who would want to create 1000 setlists? What do you mean with "unlimited"? … As a result of the dynamic memory structure, the only hard limitation for your setup is the total amount of storage memory needed for the setup. Since each element optimizes its storage memory consumption to the minimum required, it is practically impossible to give a detailed specification of the actual limits of the system. Therefore let's just give one example of a dummy sample setup. A setup which contains :

- 1000 patches, each containing a ProgChange MIDI message for sound selection
- 1000 2-state effects, each containing 2 CtrlChange MIDI messages (one for effect activation, and another one for effect deactivation)
- 1000 banks of 10 switches each. Each of the 10000 switches has a preset assigned to it
- 1000 songs, each referencing one of the 1000 banks
- 10 setlists, each containing 100 songs

This type of setup (may we call it a HUGE setup?) takes approximately 50% of the available storage capacity…

As already mentioned, one of the major advantages of the dynamic memory structure is that each setup part takes exactly what it needs, and therefore you are for instance free to create a large number of "small" presets, each containing a few MIDI messages, or a smaller number of "extended" presets which send a very large stream of MIDI data, or any mix of both.

The lower right corner of the ControlCenter main screen will show you at all time how much of the available setup memory is in use for the setup being edited. Also the LG2 itself has a local menu which shows you the amount of memory currently in use.




*LG2 menu showing current memory allocation*

This local LG2 menu also shows you the amount of memory "fragmentation". Indeed, the intelligent memory management has as drawback that local editing of the setup (that is: editing through the local menu structure of the LG2) will result in memory fragmentation. Whenever you update your setup using LG2 ControlCenter, all memory fragmentation will be cleared automatically, since storage is optimized during each download. In case you use the LG2 local menus only, the service menu offers you a "defragment" option to optimize storage memory. You can trigger this action whenever fragmentation percentage would become too high.

MAIN MENU > Service > Memory status

MAIN MENU > Service > Defragment mem.

# 9 Creating a Little Giant setup

In this chapter we will cover all aspects of a Little Giant setup. By far the most userfriendly way to create a setup is by using the LG2 Control Center. The editor contains a number of tab pages, which can be selected by clicking one of the big icons in the toolbar at the top of the screen. When creating a new setup from scratch, it is logical to run through the different tab pages from left to right. This is also how we have structured this chapter (apart from the Patchdump page which is covered first, and which is the only page not directly related to a part of your LG2 setup).

For each topic, we will first explain all available configuration options in the Control Center tab page, and at the end we will also mention the place in the local LG2 setup menu where you can configure the same options.

As you may have noticed, the toolbar is divided in 3 groups. The first group contains some global configuration options, the second group is about the main part of your setup (pedal setups, presets, banks, songs), and the last group contains the patchdump tab. Each of these icon groups has a “grip” at the left side, which allows you to drag the menu and dock it to another side of the main screen, or leave it floating on your screen. This may free up some screen estate on low-resolution screens, although we advise to keep the layout as is for optimal usability.

## *9.1 LG2 Control Center menus*

Control Center has a few general menus :

The ***File*** menu is the place to initiate a new setup, and save or load existing setups. It keeps track of the last 5 setup files being edited. This way it is very easy to re-open a setup file you were previously working on.

The File menu also contains a few import and export options. You will probably never need the option to import from or export to SysEx. This option would allow you to save your setup as a SysEx file, which can then be sent to the LG2 using any third party SysEx librarian. However, ControlCenter has its own one-click patch dump feature, so you should never need to use another tool for this.

Export to text and import from text however can be a very useful tool for “power users”. This option converts your setup into a text file, which you can modify using any regular text editor. Doing so can be a powerful way to copy-and-paste large parts of a setup, or to create a large number of presets, all containing for instance a single ProgChange message with increasing number. This kind of repetitive setup tasks are more easy to do in a text editor using copy-and-paste, rather than using the graphical user interface of ControlCenter. However, we need to stress that editing the text of an exported setup can be very error prone. There is a strict syntax to be followed, which is not documented, so pay attention to copy-and-paste the correct pieces of text, and to modify the text in line with the original format. An error in the resulting text format can result in a failing import of your setup, therefore make sure to keep a backup at all time.

The ***Preferences*** menu allows you to choose between 2 different skins for ControlCenter: a dark skin and a light skin. Which one to choose of course depends on your personal taste. However, we had a specific reason to introduce the light skin as an alternative. We found out that on Windows machines there is one specific Windows “theme”, named “Windows Classic”, which can’t cope well with the standard dark skin of ControlCenter. Disabled text, radio buttons, and other essential parts of the user interface don’t display correctly. When using this Windows theme, it is advised to switch to the light skin for Control Center.

Through the ***Help*** menu you can pop up a help page, which is different for each of the tab pages in Control Center.

## 9.2 LG2 Control Center keyboard shortcuts

Although the support for keyboard shortcuts in ControlCenter is very limited, we have introduced a few shortcuts for regular tasks, which can make life much easier.

**F5 & F6**

Using the function keys F5 and F6, you can go to the previous or next tab page of Control Center. This is particularly interesting to swap between the *Presets* page, which gives you an overview of all presets, and the *Content* page, which shows you the content of the currently selected preset.

**Ctrl+S**

The default shortcut for Save has been implemented in Control Center too. While creating or modifying a setup, you might want to save regularly. Very easy using this keyboard shortcut.

**Ctrl+D**

This shortcut triggers a download of your setup to the LG2. (Ctrl+D for “Download”). This is another thing which you might want to do very regularly while modifying your setup. With a “Ctrl+D” you can immediately test each change on the unit itself, and revert if necessary. To make this shortcut work correctly, you need to connect to the LG2 from the Patchdump tab page first (see below)

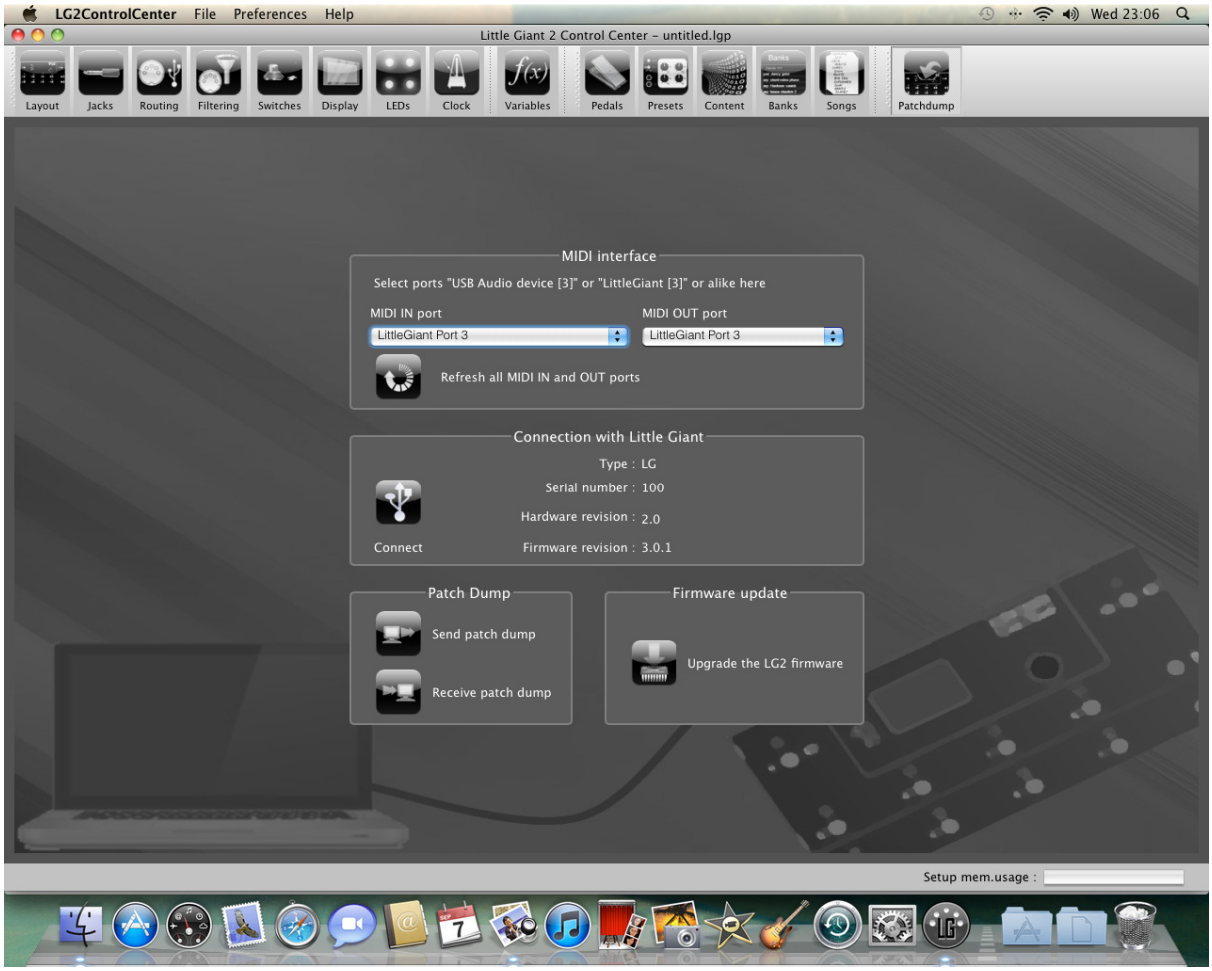
**F1**

The standard shortcut for Help, which opens the according help page about the current tab page of Control Center.

## 9.3 Setup annotations

On several places in ControlCenter, you will see a “Comments” field. These fields allow you to write down any comment or extra info which you want to add to specific parts of your setup. Obviously, these comments are not sent to the LG2, there are just stored as part of the setup file, and will be displayed in ControlCenter. There is a global comments field in the first tab (the Layouts tab), and in the Pedals, Preset content, Bank and Song pages. This means you can add specific comment for each expression pedal setup, preset, bank, banklist, song and setlist! Except for the global comment field, all other comment fields are collapsible. Hover over the region above the field, and a “splitter icon” will appear which lets you expand or collapse the comments zones. If you have trouble expanding one of the comment fields, just make sure you move the mouse far enough once you grabbed the splitter – at a certain point the menu will “pop open”.

## 9.4 The Patchdump tab page




We start with the “last” tab page, because it’s the only one not used for configuring part of your LG2 setup. You go to the patchdump page to initiate a connection between ControlCenter and LG2. See chapter 2.9 for more info about this USB connection. Main point is to select the “third” LG2 port in both MIDI IN port and MIDI OUT port dropdownboxes. (exact naming of the “third” port may differ from OS to OS, as shown in chapter 2.9, but you will recognize it easily).

Clicking the ***Refresh*** button may be necessary if the USB connection was established after Control Center had been launched already. Also power cycling the LG2 will require a refresh of the MIDI ports, that’s a restriction of the MIDI drivers both on Windows and on Mac.

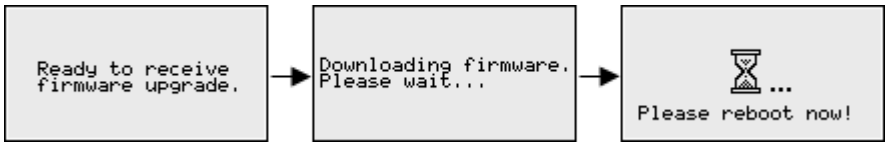
With the correct ports selected, click the ***Connect*** button. Control Center and LG2 will talk to each other, and some general info about your LG2 will appear in the Connection info field. In case you keep having timeout errors when trying to connect, close Control Center and launch it again; the MIDI ports might have gotten locked up somehow. Also double check that there is no other MIDI aware application running on your computer, which might try to allocate the LG2 MIDI ports and thus cause a communication timeout in Control Center.

Once correctly connected, the remaining buttons in this tab page will become enabled. You will be able to send the current setup from Control Center to LG2 using the ***Send patch dump*** button, and in the opposite direction the ***Receive patch dump*** button will upload the setup currently stored in the LG2 to Control Center, which allows you to make a backup of your setup on harddisk.

Using Control Center to upgrade the firmware of your LG2 is easy. First of all make sure that your LG2 is ready to receive the firmware. This needs to be done explicitly through the local menus of the LG2 – this is a safety precaution to avoid any "accidental" firmware changes.
Keep the rotary knob of your LG2 pressed for 2 seconds, then go to menu

`MAIN MENU > Service > Firmware upgrade`

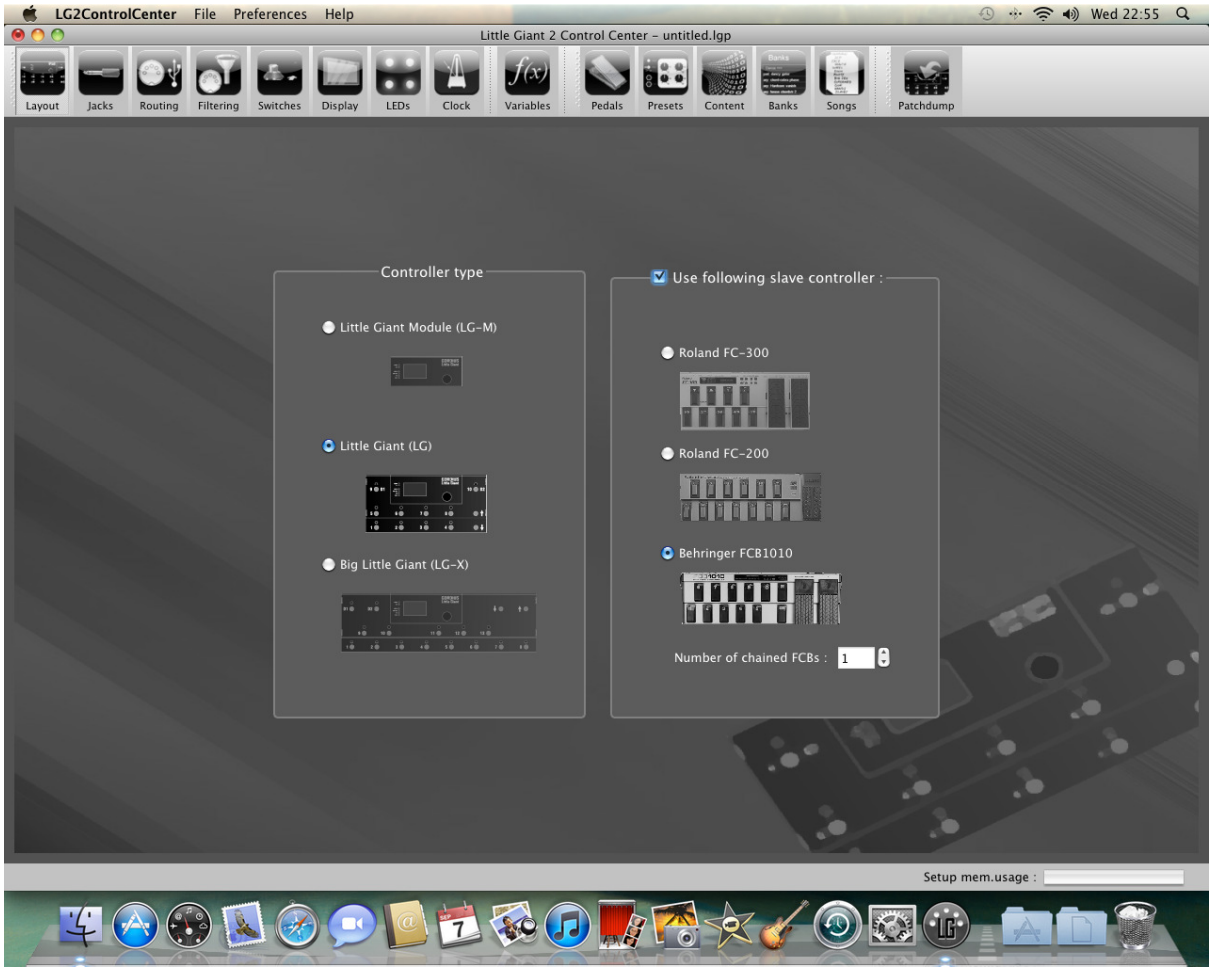
and click the accept (v) icon. Your LG2 is now ready to receive new firmware through USB. In Control Center, click the button ***Upgrade the LG2 firmware***, select the firmware file (which should have the extension .lgf), and click Ok. The firmware is now transmitted to the LG2. Once the data is correctly received and stored in permanent memory, a message appears on the LG2 display, asking to reboot your LG2. This concludes the firmware upgrade.




After reboot of the LG2, you will need to click the "Refresh" button in the patchdump page of Control Center in order to re-establish connection with the LG2. The power cycle has indeed interrupted the USB connection, and therefore the MIDI ports need to be re-initialized.

*after update, the new firmware version*
*is displayed in the LG2 splash screen*

## 9.5 The Layout tab page

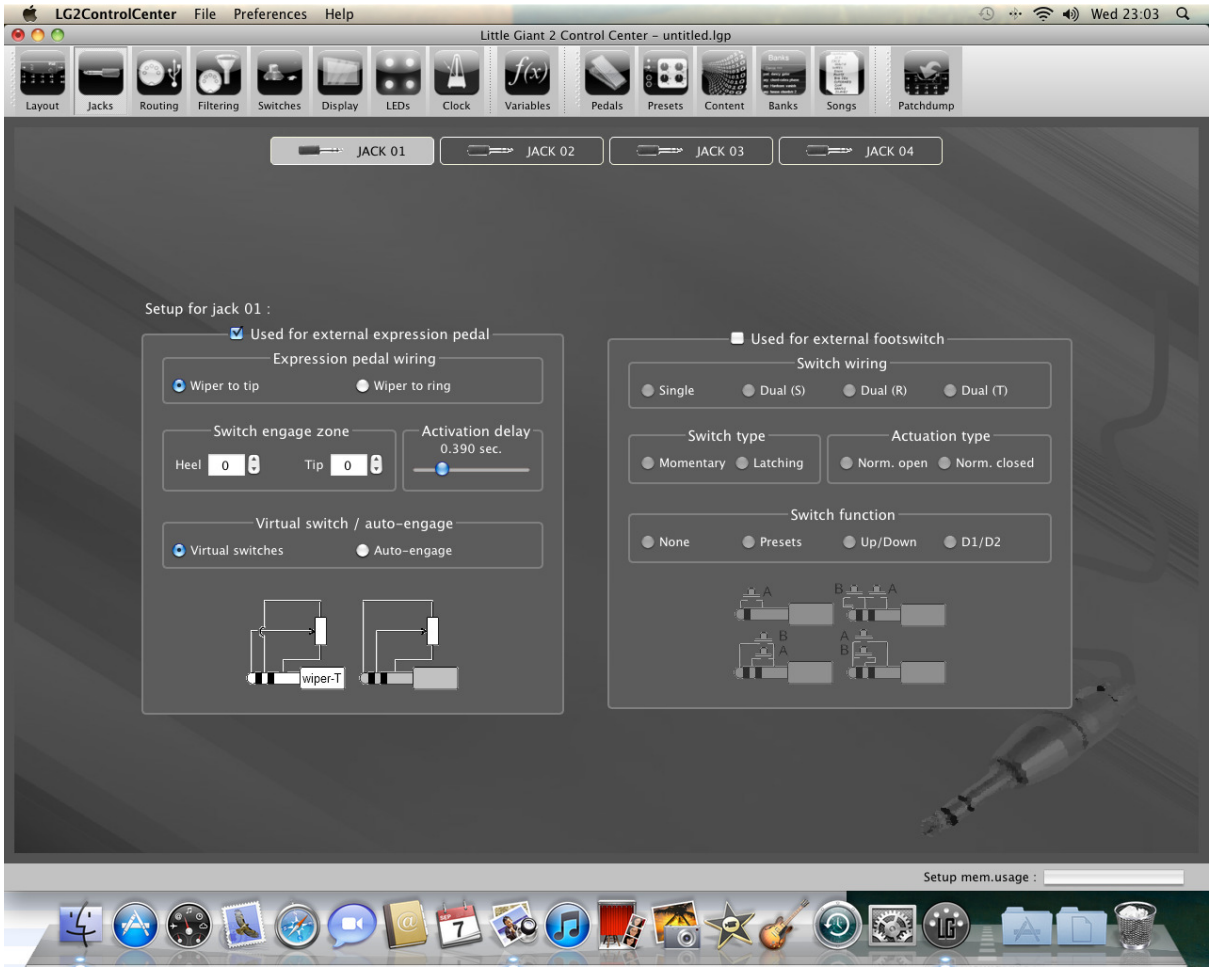



On this setup page you can do some initial configurations, which should be done before proceeding with the actual setup. Since Control Center can be used for all three product types (LGM, LG, LGX), this is the first thing to specify. You will not be able to download a setup, created for the LG2, to an LGM2, nor any other combination. Controller type of setup and device must match for a patchdump to succeed.

This page is also the place to specify if you use a slave controller, and if so, which type.

*Detailed info about using slave controllers can be found in chapter 6 of this manual.*

## 9.6 The Jacks tab page




On this page, you configure how you will use each of the 4 available stereo jacks of your Little Giant.

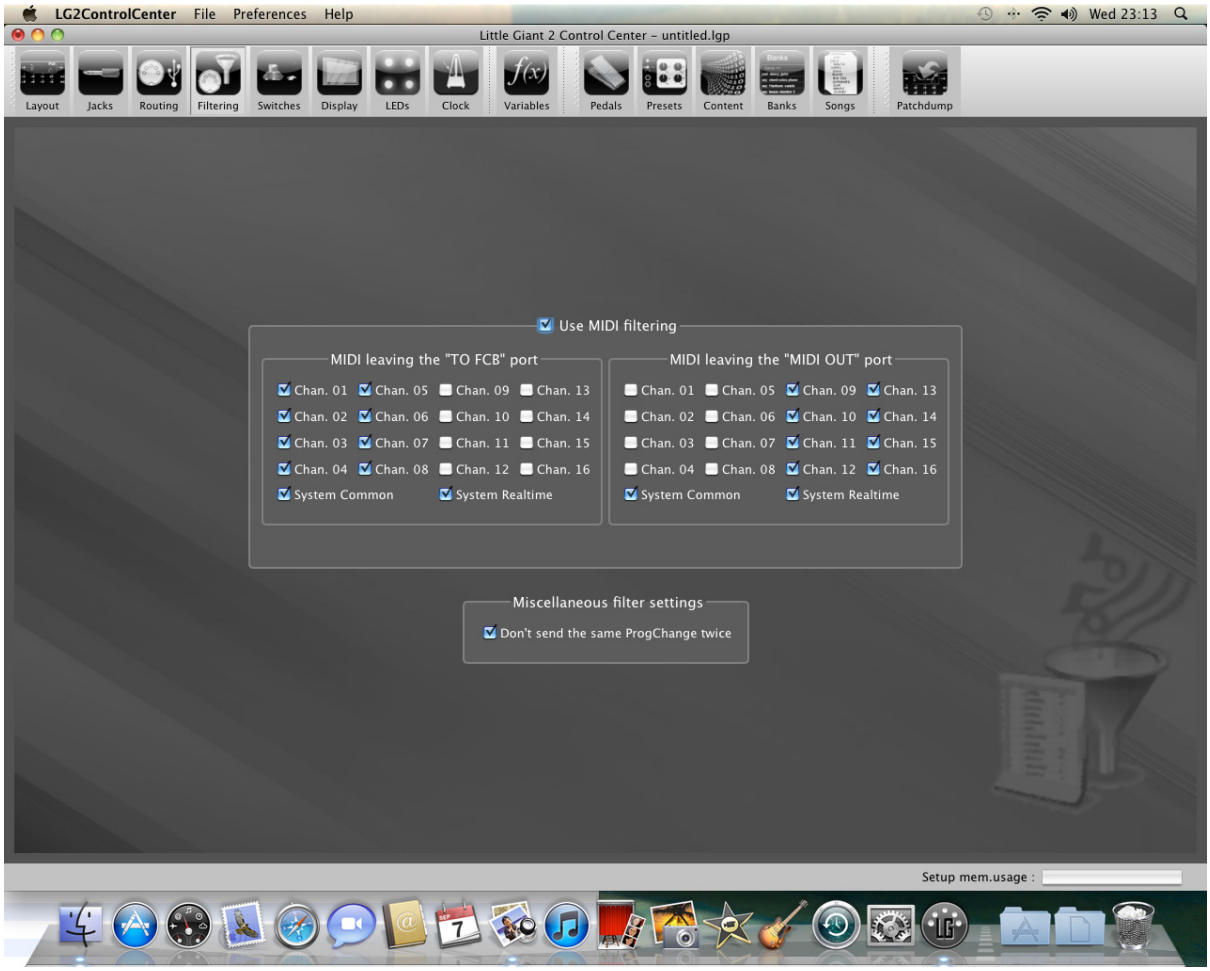
*The use and configuration of the jacks has already been covered in detail in chapter 5.*

## 9.7 The Routing tab page

The Routing tab page lets you configure how MIDI and USB signals are routed from / to MIDI connectors and connected computer.

*Chapter 4.1 already covered this part of the setup.*

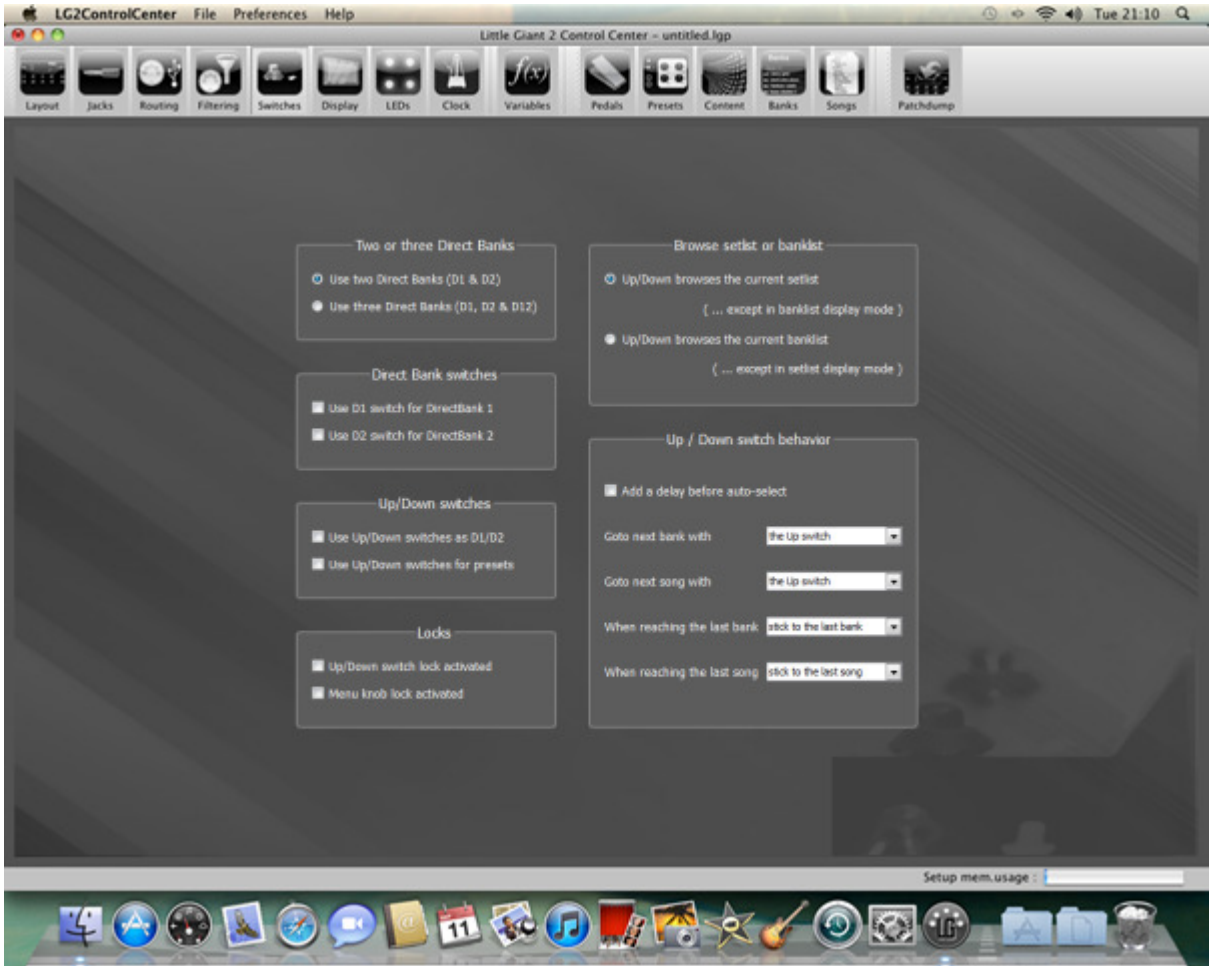
## 9.8 The Filtering tab page




On the Filtering tab page you can specify which MIDI commands go to which of both MIDI OUT ports.

*Chapter 4.2 already covered this filtering functionality in detail.*

## 9.9 The Switches tab page




### *Two or three Direct Banks*

First of all, you can choose whether to use 2 or 3 direct banks. You may think that using 3 banks is the obvious choice (the more the better…) but that's not the case: if you stick to using 2 direct banks only, you can access each of the banks with one single click: click D1 for direct bank D1, D2 for direct bank D2, click the switch of the active direct bank to return to the "normal" bank. When you choose to use 3 direct banks, you go from normal bank to direct bank D1 by clicking D1, and from normal bank to direct bank D2 by clicking D2. From direct bank D1 you go to direct bank D12 by clicking D2, and in the same way you can go from D2 to D12 by clicking D1. To go from direct bank D12 back to the normal bank again requires 2 clicks. When bank D12 is active, both the D1 LED and D2 LED will be on.

MAIN MENU > Global settings > Switches > Direct banks
> D1/2/12 or D1/D2

***Direct Bank switches***

This section allows you to specify whether or not you want to use the DirectBank functionality. If you don't need it, you can reuse the D1/D2 switches as preset switch.
For an LG2, the checkboxes "Use D1 switch for DirectBank1" and "Use D2…" are not ticked, which means that you use the switch labeled "9/D1" as a regular preset switch, and same thing for the switch labeled "10/D2". If you do tick one of these checkboxes, either switch 9 or switch 10 (or both) will disappear from the preset switches list in the bank setup.
For an LGX2, the situation is the other way round: both checkboxes are ticked by default, since the LGX2 has dedicated D1/D2 switches. However, if you prefer to use those switches as regular preset switches instead, you can untick the "Use D1 switch…" and/or "Use D2 switch…" checkboxes, and as a result you can have up to 15 "internal" preset switches available per bank!

```
MAIN MENU > Global settings > Switches > Direct banks
                                          > Use DirectBank1
                                          > Use DirectBank2
                                          > Use U/D as D1/D2
```

***Up/Down switches***

While the up/down switches are obviously meant to browse through banks or songs, there might be some setups where you actually don't need this bank browsing. If for instance you want a very concise setup, with only 3 banks in total, you can specify one regular bank plus a D1 and a D2 bank, and use the Up/Down switches to select the direct banks (Down will select D1, Up will select D2)
This option frees up the D1/D2 switches, which can then be used as regular preset switches.
Very similarly, you can use the Up/Down switches as preset switches instead of regular Up/Down switches.

***Remark :*** when you use the Up/Down switches as D1/D2 selectors, you obviously lose the visual feedback of D1/D2 LEDs. However, in several display modes you will be able to see the Direct bank name on the display. Also in the widely used Song/Preset display mode, there is an option to show the Direct Bank name instead of the song name as soon as a direct bank is active (see the "Display" tabpage discussed in the next chapter). Next to that you can also choose to use the MIDI activation LEDs on your LG module to display the Direct bank activation status. This option is discussed in the "LEDs" tabpage further down this chapter.

***Locks***

In some specific cases you might want to avoid that an unintentional click on the *up* or *down* switch immediately results in proceeding to the next or previous song or bank (for instance when rig layout or vision impairment inhibit a clear view on the floorboard). Therefore an option is added to "lock" the *up/down* switches. When this lock is activated, you need to keep the *up* or *down* switch pressed for about a second, before it actually reacts. In this mode, auto-scrolling through banks is not possible.

```
MAIN MENU > Global settings > Switches > Locks
                                          > Up/Down sw. lock
```

A second option is the "menu knob lock". Activating this option makes it more difficult to enter menu setup mode, or to change display mode: you need to keep both the *up* and *down* switch pressed with one hand, while clicking or turning the rotary knob with your other hand, in order to activate display mode selection (short rotary click) or setup mode (long rotary click). You can use this option in order to avoid clicking the rotary knob unintentionally with your foot during live use of the floorboard.

MAIN MENU > Global settings > Switches > Locks
> Menu knob lock

***Browse setlist or banklist***

The Little Giant has two “setlist” display modes (using large or small characters) and two “banklist” display modes (again using large or small characters). In these modes it is obvious that the up/down switches will browse through the currently active setlist or banklist. In the other display modes however, you have the option to choose whether you want to browse through the current banklist or through the current setlist with the up/down switches. Moreover, when you use one of the specific “Navigation” commands discussed in chapter 10.11, this preference will be automatically adapted: after selecting a different setlist using one of the Navigate commands, you can start browsing this setlist with the up/down switches. After selecting a different banklist, you can start browsing that banklist.

MAIN MENU > Global settings > Switches >

***Up / Down switch behavior***

The Little Giant, like most other controllers, has an *Up* and a *Down* switch to scroll through all its banks. Most logical way to do this, is to use the *Up* switch to proceed to the next bank, and the *Down* switch to return to the previous bank. When scrolling through a setlist however, you might wonder what exactly is the most logical way to use the *Up / Down* switches. Following the same logic as with banks, you might say that the *Up* switch proceeds to the next song. However, in “setlist display” mode the Little Giant shows part of the current setlist on the graphical display. When looking at this list, it might feel more natural to proceed to the next song by using the *Down* switch instead. For this reason, the global setup gives you the option to choose the preferred behavior, both for banks and for songs.

MAIN MENU > Global settings > Switches > U/D behavior
> Next bank switch
> Next song switch

Another option which can be customized is the preferred behavior when you reach the end of the list (banklist or setlist). You can choose to “stick” to the last item in the list, or to jump back to the first item in the list, as in a circular list.

MAIN MENU > Global settings > Switches > U/D behavior
> Banklist limits
> Setlist limits

There is one last setting with regards to the way you can scroll through banks and songs. In order to understand this option, we first need to mention the existence of “default presets” for both banks and songs. This will be covered in a later chapter, but we can mention in short that any preset can be configured to get triggered automatically when activating a certain bank or song. Apart from that, you already know that the *Up / Down* switches have an auto-scroll function: when you keep a switch pressed for longer than a second, the LG2 will automatically start scrolling through all banks or songs. If you now combine both features, you will understand that auto-scrolling through a banklist or setlist might result in a large amount of MIDI messages being sent, since each bank or song being scrolled through (even shortly during auto-scroll) will trigger selection of its default preset. In order to avoid this, you can enable the option “*add a delay before auto-select*”. This will postpone the triggering of the default preset of a bank or song for about half a second. This delay is long enough to avoid shortly activating a lot of presets during auto-scroll. Only when you stop scrolling, the default preset for the final bank or song will get selected after the 0.5 second delay.

MAIN MENU > Global settings > Switches > U/D behavior
> Autoselect delay

*Hint :* remember that besides using the up/down switches there is another way to have fast access to any of the banks or songs within the current list. You can use the rotary knob to scroll through the list in high speed. Of course the auto-select delay mentioned above applies in this case too.

## 9.10 The Display tab page

### *ProgramChange display range*

The MIDI standard uses 7-bit data bytes with a value range of 0 – 127. Data bytes are used to represent a ControlChange number, ControlChange value, ProgramChange number, Note number, Note velocity, and much more... A ProgramChange number in most cases corresponds to a certain sound in a MIDI controlled sound module, synth, effect… When referring to the sounds in a bank, many manufacturers prefer to use a number starting from 1 up to 128, even if the underlying MIDI value is one less, using the range 0-127. MIDI message “PC 000” will activate “sound 1” of the device, while “PC 127” will activate “sound 128”.

Therefore, the LG2 Control Center has the option to choose the displayed range for ProgChange numbers. This setting influences the local LG2 setup menus for MIDI messages, the LG2 MIDI monitor screen, but also the ControlCenter “content setup” tab. Also the “keypad mode” discussed in chapter 10.14 will use numbers in the range 001 – 128 if this range has been chosen here.

MAIN MENU > Global settings > Display > PC display range

***"Bank-Preset" display mode options***

In "Bank-Preset" display mode, the currently selected song or bank is shown in big size characters, along with the currently selected preset. The default behavior is to show the song name if a setlist is being used, or the bank name if no setlist is being used (and therefore no song is currently active). The global configuration allows to deviate from that standard behavior.

Select "*show bank and preset*" if you make use of setlists and songs, but you still want to see the bank name instead of the song name in this display mode.

In the standard mode of showing song names, it might still be handy to have a clear indication when a direct bank is currently selected. This is possible by selecting the option "*show song and preset, but show D1 / D2 bank when selected*".

MAIN MENU > Global settings > Display > Bank-Preset mode

***Presetname display***

There are a few display modes available which show you the currently selected preset in big font characters. However, you might prefer one of the other interesting display modes like banklist or setlist display. In these display modes too, it is possible to have the preset name displayed for a few seconds after selection. This option is enabled here.

*Attention : the additional option to display all linked 2-state effects is not yet available !*

MAIN MENU > Global settings > Display > Show presetnames

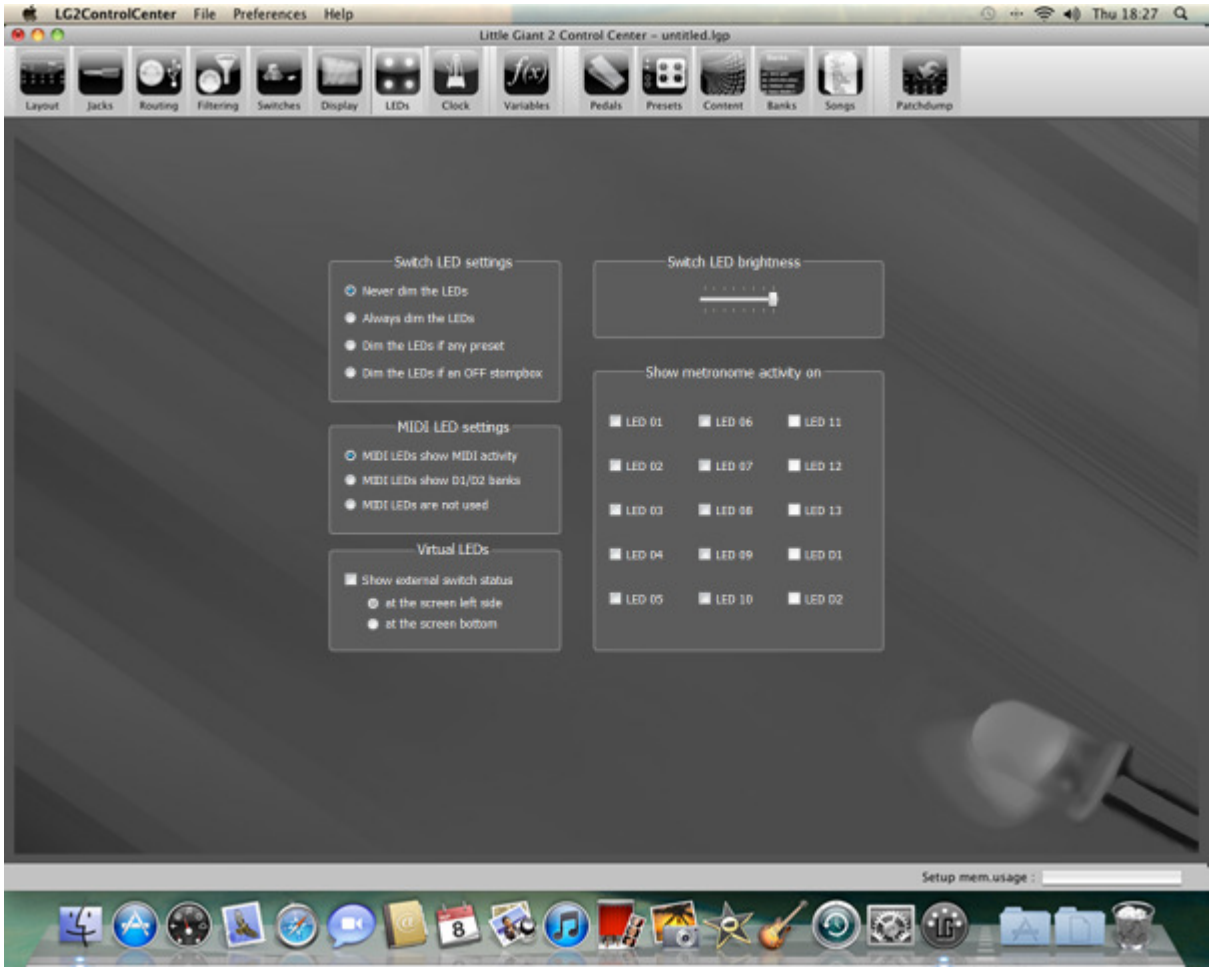
***Expression pedal display***

With this configuration setting, you can enable the display of the current expression pedal value on the LG2 display. As soon as you move an expression pedal, the display will show the actual MIDI values being transmitted to the controlled device.

This can be very handy while testing your setup. However, we have noticed that the constantly changing value display puts some burden on the internal processor of the LG2. This can result in a slightly less responsive continuous adjustment. Therefore, if you want to have the position of your expression pedal displayed, we advise to use the extra option to show the expression pedal value when pedal movement stops. This avoids any interference between display refresh and MIDI stream, and still gives you a clear indication of the end position of your expression pedal.

MAIN MENU > Global settings > Display > Show pedal value

## 9.11 The LEDs tab page




### *Switch LED settings*

By default, the switch LEDs act like regular single color *on / off* LEDs. They indicate if the preset linked to a switch is currently selected, or if a 2-state effect is currently on or off.

It is also possible to have the LEDs on at all time, and use 2 brightness levels: a very dim brightness to indicate an “off” state, and full brightness to indicate the *on* or *active* state. This is a cool way to spot your LG2 on a completely dark stage!

Finally it is also possible to give a certain meaning to the “*dim*” state of the LEDs. In that case you turn the LEDs into three-state indicators (*off / dim / on*). Kind-of multi-color LEDs suitable for color blind people… You can give 2 different meanings to the dim LEDs :

The option “*Dim the LEDs if any preset*” will clearly indicate which switches of the current bank are actually in use. If any type of preset (patch or effect) is linked to the switch, the LED will be dim. A second option is to dim the LEDs of an OFF stompbox. This means that all two-state effects will always have a dim or bright LED, depending on their effect state, while the LED of patch switches will be either *on* or *off.*

MAIN MENU > Global settings > LEDs > LED dimming

### *Virtual LEDs*

External switches obviously don't have LEDs which are under control of the LG2 engine. Therefore, the state of the 8 supported external switches can optionally be shown on the display as a small row of circles, hollow or filled to denote the LED ON/OFF state.

### *MIDI LED settings*

The LG2 top cover contains a number of square indicator LEDs. Two LEDs, marked "MIDI IN" and "MIDI OUT" show you the MIDI activity on MIDI IN and MIDI OUT ports. In some cases, these LEDs might be constantly lighted (for instance when using MIDI Clock or when a connected device emits ActiveSense MIDI messages), or the LEDs might be constantly flashing (for instance when a tempo signal is being transmitted by a device in the MIDI chain). If this disturbs you, you can disable the MIDI LEDs here.

You also have the option to duplicate the selection state of the Direct1 and Direct2 banks on the MIDI LEDs. This may be interesting when you use an external pair of footswitches for Direct Bank selection, and those footswitches don't have their own LEDs.

MAIN MENU > Global settings > LEDs > MIDI LEDs

### *Switch LED brightness*

The LG2 uses high-brightness red or blue LEDs which are very well visible under all lighting conditions. Some people may find the blue LEDs even too bright on a very dark stage (although this will probably be the case only with the very first blue-LED Little Giants, which used clear instead of diffused LEDs). In any case, configuration allows you to finetune the brightness of the switch LEDs.

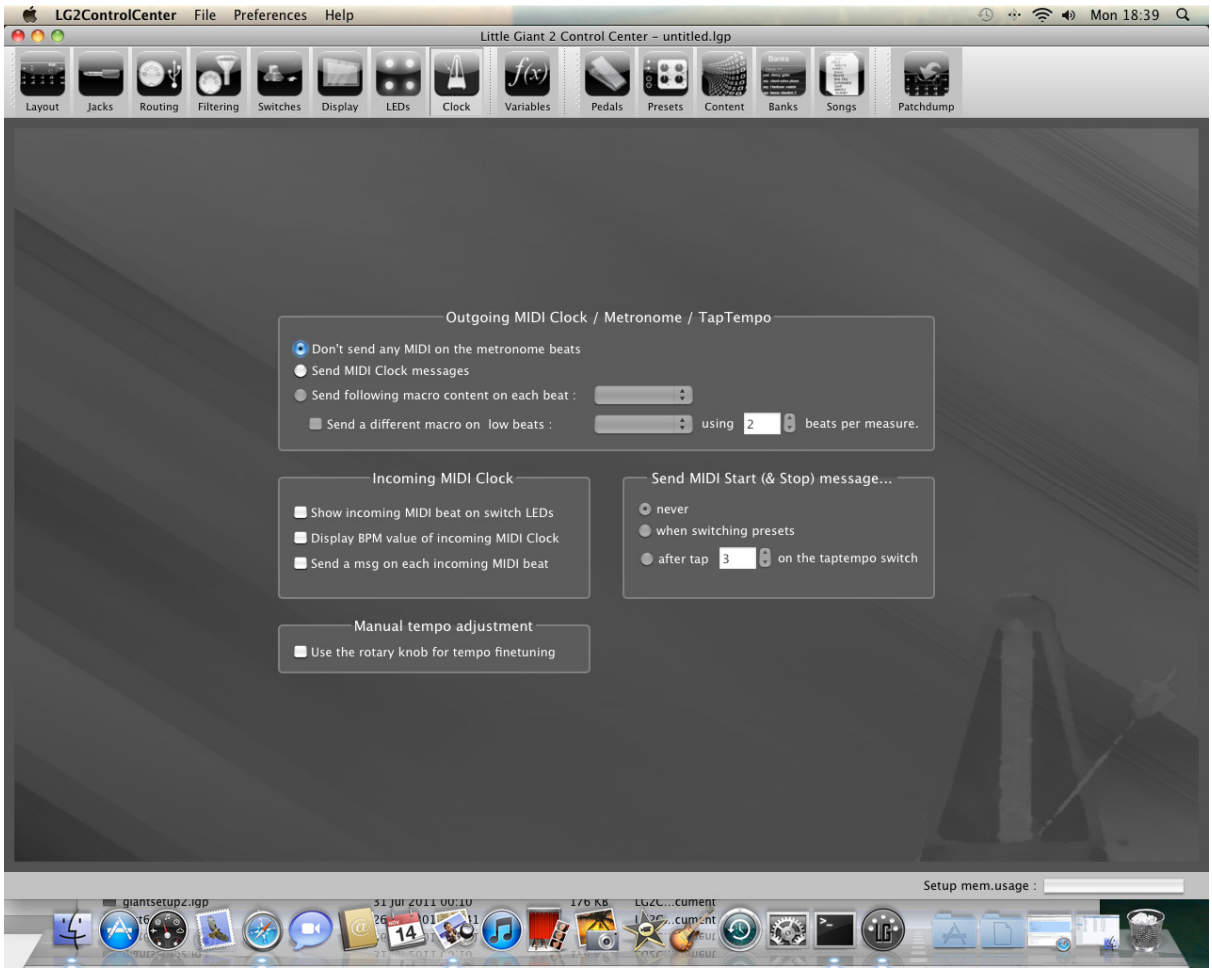
MAIN MENU > Global settings > LEDs > LED brightness

### *Showing metronome activity*

As you can read in the next topic, the LG2 supports MIDI clock, has a built-in metronome, and also some taptempo functionality. For all these tempo related features, you can choose on which switch LED(s) you want to see the current tempo. You can use all switch LEDs or a whole row of LEDs for optimal visibility, or you can show the tempo on a single LED, for instance near the switch used for taptempo input. In any case the tempo is also shown on the square "*BUSY"* indicator LED.

MAIN MENU > Global settings > LEDs > Metronome LEDs

## 9.12 The Clock tab page




The Little Giant has a number of clock related features. It can be used as a metronome with programmable BPM, as a master clock with adjustable tempo through footswitch tapping, it can display the BPM value of an incoming MIDI Clock signal, etc… This functionality is described below, along with the different configuration parameters.

### *Outgoing MIDI Clock / Metronome / TapTempo*

Any of the preset switches can be used to activate a programmable metronome with a certain predefined BPM. Alternatively, the metronome tempo can be defined "live" by tapping a preset switch. Advanced features like this are programmed into the unit by the use of special GORDIUS commands, which can be part of any preset stream. Therefore, you will find more detailed info about setting up a metronome or taptempo switch in the GORDIUS command reference chapter. What we are discussing here are some global parameters, related to metronome and taptempo.

Apart from showing the metronome tempo on the switch LEDs (as configured in the previous chapter) and displaying the BPM value on the LG2 display (which is done by default), you can also choose to send certain MIDI messages, indicating the current tempo. The most commonly used MIDI message type for this is MIDI Clock. When you enable MIDI Clock transmission, a continuous stream of Clock messages will be sent, in the tempo of the metronome or taptempo engine.

Alternatively you can send for instance a ControlChange message on each beat. Some devices accept a CC message to adapt time dependent effects, like delay, tremolo, modulation, etc…

One other possibility could be to send a NoteOn / NoteOff message on each beat. Connect your LG2 to a sound module, and you have a “real” metronome with programmable beep… To make this complete, you can specify how many beats per measure you want, and define a different note or sound on the low beats.

In order to make all this fully customizable, the global setup menu lets you choose a macro (which is nothing but a set of MIDI messages) which will be transmitted on each beat. The macro will probably contain a single ControlChange, MIDI Note message, or alike. You have the option to send a different macro on the low beats, in order to differentiate between high and low beats of the tempo.

MAIN MENU > Global settings > Clock > MIDI Clock OUT

***Sending MIDI Start & Stop messages***

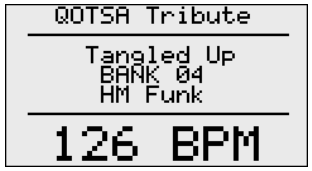
In case your LG2 metronome or taptempo is configured to send MIDI Clock, you might be interested in specifying if and when the corresponding MIDI Start & Stop messages are transmitted. You can specify “never” – in that case you are free to add the Start and Stop messages to any preset content, and this way create your own Start / Stop switch(es). Or you can specify to automatically send start/stop messages when switching presets. As a third option, you can specify to send a MIDI Start message only after tapping 3, 4 or 5 times the same switch. This option is specifically aimed at using a TapTempo switch: in that case the first few taps are needed to specify the rhythm, and you can automatically start a sequencer or backing track for instance after the third, forth or fifth click on the TapTempo switch (1, 2, 3, go !...)

MAIN MENU > Global settings > Clock > MIDI Start/Stop

***Incoming MIDI Clock***

All previous configuration settings were related to an outgoing MIDI Clock, generated by the internal metronome/taptempo engine. However, the LG2 can also process incoming MIDI Clock signals. It can extract the beats from the incoming clock and show them on the switch LEDs (as configured in the LEDs tab page). The LG2 can also calculate in realtime the BPM of the incoming MIDI Clock, and display this value on the screen. Finally, the incoming clock can also trigger the transmission of a MIDI message on each beat, just like the internally generated clock can do, as described in the topics above.

MAIN MENU > Global settings > Clock > MIDI Clock IN




*displaying BPM of an incoming clock*

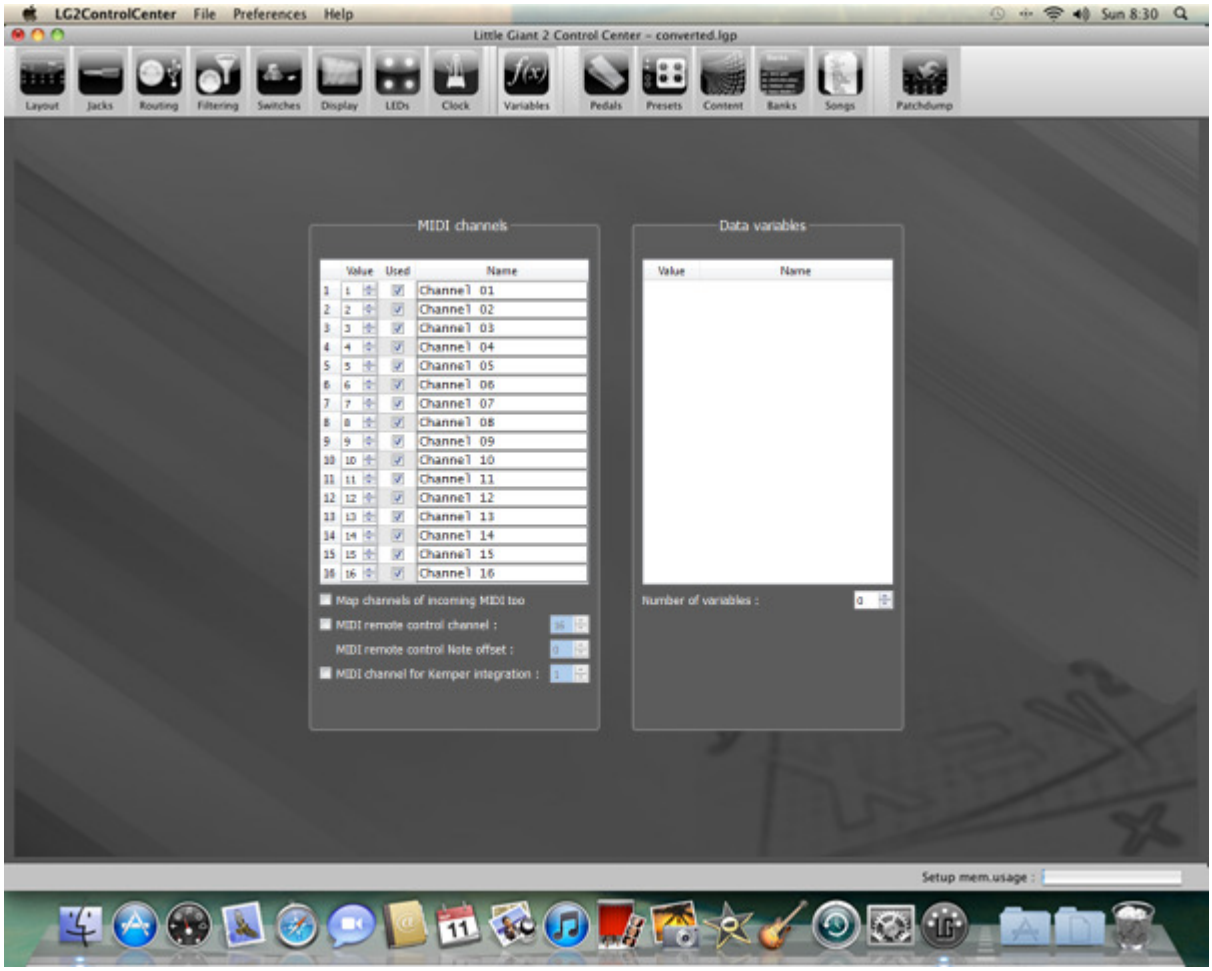
***Manual tempo adjustment***

As described above you can use the LittleGiant as a MIDI Clock master, sending out a clock at a predefined BPM rate, or at a rate specified by tapping a footswitch (using the TapTempo functionality)

There may be situations where you want to finetune this MIDI Clock tempo after it has been set to its predefined value or after you have tapped it with your foot. Of course the taptempo functionality allows you to adjust the tempo by “re-tapping”. However if you need more accurate adjustment, you can use the rotary knob for this. The Clock tab page offers you the option “use the rotary knob for tempo finetuning”. After activating this option, you can simply turn the knob in order to increase or decrease the current tempo. The adjusted BPM value will be displayed on the LG2 display. Be aware, in order to use the rotary knob as an adjustment knob (in this specific case: a knob for tempo adjustment) you need to put your unit in “rotary adjust” mode. This is done by clicking the rotary button until a hollow circle is shown in the right upper corner. This is exactly the same way as explained in chapter 3.3, which covers using the rotary knob as realtime MIDI controller. It will be clear that this MIDI controller functionality for the rotary knob will no longer be available if you choose to use it for tempo adjustment instead.

MAIN MENU > Global settings > Clock > Rotary for tempo

## 9.13 The Variables tab page




This setup page covers 2 relatively unrelated topics : MIDI channels and data variables.

### *MIDI channels*

As you will probably know, the MIDI standard allows you to use 16 different MIDI channels. Each of your devices can listen to one specific channel and ignore all messages on other channels. This way, a single MIDI chain can be created by connecting the MIDI OUT of one device to the MIDI IN of the next device, and one single MIDI controller can talk to each of the devices without disturbing the other devices on the chain. On different places in the ControlCenter user interface, you will need to specify the MIDI channel – most obvious place is the “content” setup page where you specify all MIDI messages to be transmitted. Instead of using the standard MIDI channel numbers 01 – 16, Control-Center allows you to assign a useful name to each of the channels, and use that name instead of the number. The name of the device listening to a certain channel will be the most obvious name for that channel in the ControlCenter user interface. You can type that name in the MIDI channel list on this setup page. You can also tick a checkbox for each MIDI channel which you actually use. As a result, the MIDI message setup page will give you a dropdownbox for MIDI channel selection, which contains a short list of device names to choose from. This is more user friendly that filling in a number.

And much more important : if for some reason you decide to move a certain device to a different MIDI channel, this takes just a second. All you need to do is change the “Value” for that MIDI channel in the list. Automatically all MIDI messages throughout your entire setup will start using the new MIDI channel value. Imagine the hassle if you would need to scan your entire setup for changing this MIDI channel value on all places…

***Remark:*** *for the moment the MIDI channel names are used in ControlCenter only. LG2 still uses MIDI channel numbers instead. For this reason, there is no MIDI channel setup available in the local LG2 menus*

***Changing MIDI channels during live performance***

There is a second reason why the LG2 uses a configurable MIDI channel list. As you will see in the command reference chapter later on, there are a few GORDIUS commands available which let you change the MIDI channel number for any of the defined channels. One example shows you how powerful this feature can be: imagine that you are controlling an extended rig which contains 2 hardware loopers. You could create a “looper control” bank with the regular record/overdub/play/… switches, and a “toggle” switch which lets you choose if you want to control looper A or B. In order to accomplish this, the toggle switch contains a 2-state effect which toggles the MIDI channel value used in the control switches between 2 possible values.

*Chapter 10.8 covers the MIDI Channel control commands.*

***Map channels of incoming MIDI too***

The meaning of this option is probably not very obvious. We just explained how you can change a MIDI channel value during live performance. This gives you extended possibilities when controlling multiple similar devices. The same system can optionally be applied to incoming MIDI too. You could have an LG2 switch which modifies the MIDI channel of incoming MIDI messages being forwarded by the LG2. Again a powerful feature for very specific cases.

***MIDI remote control channel***

This setting is related to remotely controlling the LG2 from another MIDI controller. You define here which MIDI channel will be used for the remote control. Also the range of Note messages used for remotely triggering LG2 switches can be adapted to your needs.

*Refer to chapter 7 for more details about this functionality.*

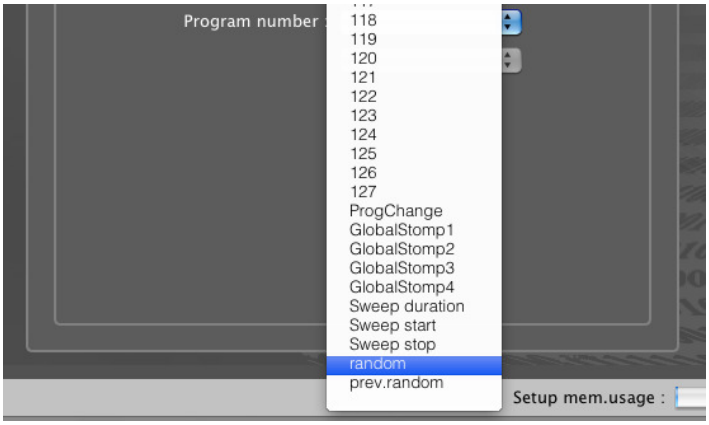
***MIDI channel for Kemper integration***

With this checkbox you enable two-way communication with the Kemper Profiler. Check out the links section of the Gordius website. It contains additional documents which specifically cover this integration between the Gordius and Kemper products.

### *Data variables*

The use of data variables is one of the more advanced feature of the LG2. When you specify the MIDI messages to be transmitted by a certain preset, you can optionally use “data variables” instead of fixed values for the MIDI message data bytes. Up to 100 data variables can be specified in the current setup tab page. After that, these variable names will appear in the dropdown box which selects the data byte(s) of a MIDI message (more specifically in the “content” tab page discussed in a next topic). So apart from the regular values 000 – 127 for those data bytes, you can also select a variable. The variable setup tab lets you specify an initial value for all values. But of course the power of the variable system lays in the fact that with the click of a switch you can modify the value of those variables. You do this by triggering one of the GORDIUS commands discussed in chapter 10.8. There are a few commands related to variables : set a variable to a certain value, increase or decrease the value with one, you can even trigger a 2-second large-character display of the current variable value on the LG2 screen. Data variables can not only be used in MIDI messages, but also in many GORDIUS commands discussed later on. Those GORDIUS commands already offer you an extended and unique feature set, adding the use of data variables to it opens yet more possibilities.

It’s impossible to list all scenarios which can make good use of this data variable system. They are numerous, and above all very much depending on your personal way of organizing your setup. As a guideline, we will give a few examples in chapter 10.8 which discusses the data variable commands.




*Data variables can be chosen as data byte for any MIDI message*

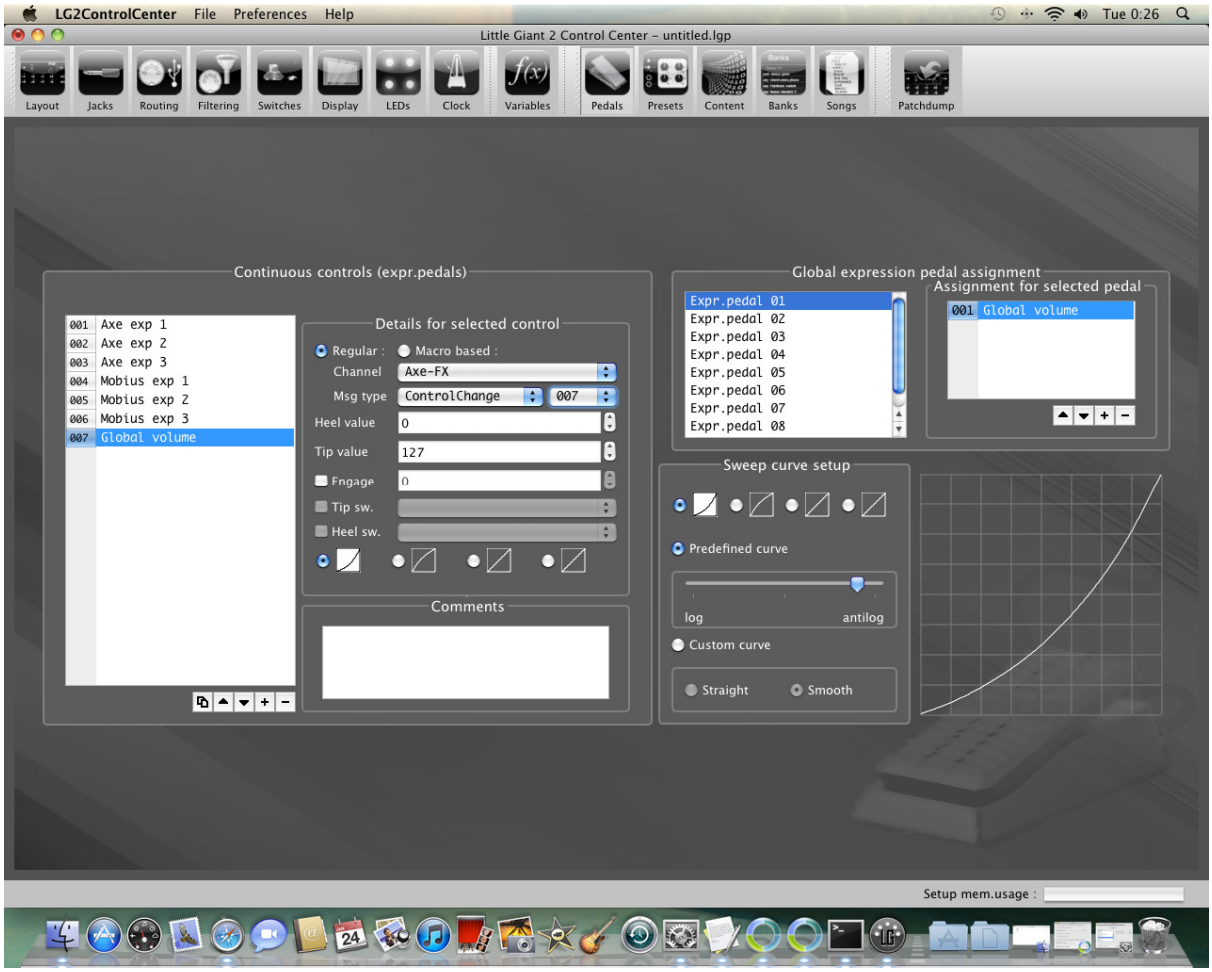
### *Random MIDI value*

Let us mention one fun extra feature, which is not really related to the data variable setup, but which you may have noticed in the screenshot above. Instead of specifying a fixed value or a programmable variable value as data byte for a MIDI message or GORDIUS command, you can also specify “random”. This will use a randomly changing value each time the MIDI message is transmitted or the GORDIUS command is triggered. Again, we leave it up to your imagination to make creative use of this fun feature.

You will notice there is also a “prev.random” entry available. This reuses the previously used random value, which may be interesting in certain scenarios. Imagine you use the LG2 as a random note generator. In that case you will want to send a corresponding NoteOff command for each random NoteOn. This is where you will need to use the “prev.random” value. We will shortly come back to this “random” feature in the GORDIUS command reference chapter, since there is a command available to configure the range of the random values

*Chapter 10.8 contains more details about using variables, changing MIDI channel values, and setting the range for the random generator.*

## 9.14 The Pedals tab page




On this tab page, you can configure how the expression pedals will be used. For that you create a number of “expression pedal setups”. Since the pedals can be programmed differently depending on the selected preset, you may well create much more expression pedal setups here than you have pedals connected. The “global expr.pedal assignment” field lets you specify the default behavior for each of the connected expression pedals, while the GORDIUS command *ActivateContCtrl* can be added to the message stream of any preset to change the pedal functionality individually for each preset.

*The ActivateContrCtrl command is discussed in chapter 10.3*

It is even possible to assign more than one expr.pedal setup to the same expression pedal. This will result in multiple continuous adjustments being done simultaneously by moving one single expression pedal.

As you may have noticed, in the global assignment field you can specify the default behavior of up to 8 expression pedals while your LG2 only has 4 pedal input jacks available. Indeed, in the future we might release an extra module which extends the LG2 to have 8 jack inputs. But apart from those future plans, already today you can use more than 4 expr.pedals, by connecting one of the supported slave controllers : Behringer FCB1010 or Roland FC-200 or FC-300.

***Expression pedal numbering***

- Expr.pedal 01-04 always refer to the 4 input jacks of the LG2.

When you connect up to 3 FCB1010 slave controllers :

- Expr.pedal 05-06 refer to the built-in expression pedals of the first FCB1010
- Expr.pedal 07-08 refer to the built-in expression pedals of the second FCB1010
- The third FCB1010 will reuse Expr.pedal 01-02 settings. This means that you can do the same adjustment with the built-in pedals of the 3rd FCB1010 as with external expr.pedals connected to jack 1 & 2.

When you connect a Roland FC-300 slave controller:

- Expr.pedal 05-06 refer to the built-in expression pedals of the FC-300
- Expr.pedal 07-08 refer to the first two jacks on the FC-300

When you connect a Roland FC-200 slave controller:

- Expr.pedal 05 refers to the built-in expression pedal of the FC-200
- Expr.pedal 06-08 refer to the first three jacks on the FC-200

As you can see, through the use of a slave controller you can have up to 8 expression pedals at your disposal.

Next to those 8 expression pedals, also the “rotary knob” is mentioned in the global expression pedal assignment setup, as well as in the *ActivateContrCtrl* command briefly mentioned above. Indeed, you can use the rotary knob of your LG2 as a realtime continuous MIDI controller, just like an expression pedal. This topic was covered in chapter 3.3.

***Adding, removing, copying and moving expression pedal setups***

At the bottom of the expression pedal setup list (left side of the screen), you will see 5 buttons. You will find the same type of buttons beneath all different setup lists throughout ControlCenter. They all function exactly the same way. The “+” button adds a new item (in this case a new expression pedal setup). The item is inserted in the list right after the currently selected item (or at the end of the list if no item is currently selected). All properties of the new item are given a default value which can be edited afterwards. The “-“ button removes the currently selected item. The up and down arrows let you move an item up or down the list: as the item list grows you may want to reorder its content. Finally, the most leftside button is a “copy” button. It creates a new item, which is an exact copy of the currently selected item. Only the name is different : a “ (1)” is appended, since all item names need to be unique. When creating several items (expr.pedal setups, presets, songs, whatever…) which are very similar, the copy button can be very helpful and save you some work.

***Expression pedal setup properties***

*Regular vs Macro based*

The first option in the expr.pedal detail screen ("macro based") is already a very powerful one :
a regular expr.pedal setup allows you to specify the MIDI channel, message type and CC number of the message being sent by the pedal. More details about this below. However, the LittleGiant also gives you an alternative, not available in any of the competing products (at the moment of writing, that is…) : you can specify a macro (= a set of commands) to be transmitted by the expression pedal. This allows you for instance to send a short multi-byte sysex message instead of a single CC message, or to send any combination of MIDI messages with an expression pedal. Of course at least one of the bytes within that macro needs to vary along with the pedal movement. You can use DataVariable1 for this.

Example 1 :

Let's suppose you want to send a sweep of PC messages on 3 different MIDI channels, using an expression pedal. One way to program this is as follows :

- activate the use of a data variable, by going to the Variables tab page, and specifying "number of variables = 1". If you already make use of data variables in your setup, you will need to shift those variables one up, because the first variable in the list is the one reserved for expr.pedal macros.
- create a macro, called "PC Sweep". Add 3 messages to that macro, using "Var 01" (or whatever name you have given to the first data variable in the list) :
  Channel 01 – ProgChange – Var 01
  Channel 02 – ProgChange – Var 01
  Channel 03 – ProgChange – Var 01
- on the pedal setup page, create an expr.pedal setup, and specify that it uses the "PC Sweep" macro

You will notice that, with this setup, rocking the expr.pedal will result in a MIDI stream, containing groups of 3 PC messages with varying PC Number.

Example 2 :

Suppose you have a device which can be tweaked using Sysex messages. Let's say that sysex message F0 01 02 03 45 nn F7 is the format to set a certain parameter to value nn (any value between 0 and 127) You can adjust this parameter with an expression pedal, by creating a macro which contains this sysex message. The programmed sysex format needs to be F0 01 02 03 45 80 F7 in this case. In other words: replace the byte which needs to be variable with value 0x80 (or 128 decimal). As a result, this byte will be replaced by a value between 0 and 127, according to the expression pedal position.

*Channel – Msg type – CC number*

In most cases you won't need the advanced functionality described above. For a straightforward "single message" stream, you specify which type of message you want to transmit, on which MIDI channel. In case of a CC (ControlChange) message, you also need to specify the CC Number.

In this mode, the LG2 supports not only CC, but also the other MIDI message types which are related to continuous control, namely ChannelPressure and PitchBend.

One important remark with regards to PitchBend: the MIDI standard provides a high resolution PitchBend adjustment. While most MIDI values only have 7-bit resolution, PitchBend can be adjusted with a 14-bit resolution. In order to accomplish this, pairs of 2 messages are sent, one containing the MSB (most significant 7-bit value), and another one containing the LSB (least significant 7-bit value). The LG2 supports 14-bit adjustment when using sweep curve 4. (sweep curves are discussed below, just remember to use curve 4, shown in the right lower corner, when you want to have full-resolution PitchBend adjustment)

You will notice that you can also choose “none” as MIDI message type, which doesn’t seem very useful. You can do this if you want to use only the “virtual tip and heel switches” discussed below, whitout doing any continuous adjustment. This way you can use an expression pedal as an alternative for a dual footswitch.

*Heel value – Tip value*

These values specify the range of outgoing MIDI values. In most cases, you will use the default full range of 000 – 127. However, you can easily limit the adjustment range to a smaller range if required. Another option is to swap heel and tip value. This will result in an “inverse” adjustment, with the minimum value being sent with tip down.

*Attention :* this range setup has nothing to do with pedal calibration. The calibration procedure is intended to map the physical resistance change, detected by the input circuitry, to a full range sweep. As a second step, the heel / tip value setting can again scale down this full range to the specified MIDI value range.

*Pedal calibration has been discussed in chapter 5*

*Engage value*

Another interesting option: you can choose to have the continuous control initially enabled only after reaching a certain value. This is especially useful in order to avoid sudden volume boosts when switching presets. Imagine that for a certain preset you have a high gain effect linked to the expression pedal. If the pedal happens to be in the tip position when switching presets, you might get a very uncomfortable sudden volume boost ! This can be avoided by specifying a low “engage value” for this expression pedal setup: in that case, after switching preset, you first need to move the pedal down to that low engage value. Only when you reach this value, the expression pedal starts sending MIDI messages. No more unpleasant surprises. Although the naming is similar, this “engage value” option has nothing to do with the “auto-engage” functionality, which is discussed below.

*Tip switch and heel switch*

A very powerful feature is the software simulation of a tip and/or heel switch, available in each expression pedal setup. This feature gives you the same functionality as if you would have a real momentary or toggle switch mounted underneath the pedal, at tip position or at heel position. This “virtual switch” can for instance be used to activate and deactivate the effect being controlled by the expression pedal. You may appreciate the fact that this option offers you a “heel switch”, as opposed to the real “tip switch” available on some expression pedals. In general it is more comfortable to engage or disable an effect by moving the pedal towards heel position, where the effect is on its minimum value, instead of using the tip position where the effect is on its maximum value.

The activation or deactivation of an effect is done by linking a preset to the tip or heel switch. Remember that the virtual switch is “clicked” by entering the tip or heel zone, the switch is “released” by leaving the tip or heel zone. Therefore, you can configure the effect activation in different ways : when you link a 2-state effect to the virtual switch, you activate the effect by “clicking” the virtual switch once, and you deactivate the effect again by “clicking” the virtual switch a second time. When you link a momentary effect to the virtual switch, you move the pedal to its limit position (heel down or tip down, as you prefer) to disable the controlled effect. You enable it again by moving the pedal away from its tip or heel position. Just realize that the momentary effect sends its “first message stream” when you enter the tip or heel zone, and the “second message stream” when you leave the tip or heel zone. For that reason, you need to store the effect “activation” message in the switch “release” stream (the second message stream), while the effect “de-activation” message needs to be in the switch “click” event (the first message stream). This may seem unlogical at first sight, but indeed the virtual momentary switch is actually used as an effect “mute” switch here.

*Auto-engage function*

Apart from the virtual tip and heel switch described above, you can also use an LG2 expression pedal with “auto-engage” function instead. With that function, you don’t enable or disable an effect by going to the tip or heel position. Instead, the virtual tip switch will be “pressed” as soon as you start moving the expression pedal, and it will be “released” when you don’t move the pedal for a certain amount of time (this time is configurable). This means that in this scenario you should use a momentary effect (not a two-state effect) to activate / deactivate an effect on “virtual switch press / release”.

*(De)Activation delay*

In order to avoid triggering a virtual switch when shortly entering the switch activation zone during pedal movement, you can specify an activation delay between 15 ms and 1.9 sec. The virtual switch will be “engaged” only after this delay. When using the auto-engage function instead, this same delay is actually used as a “deactivation delay”: the effect is activated immediately when moving the pedal, but it is deactivated only after the pedal has stopped moving for the specified amount of time.

The choice between using auto-engage or using tip / heel switches, and the (de)activation delay are both global settings. They are configured in the Jacks tab page of LG2 ControlCenter (but the configuration is shared between all jacks), or you can configure this in following local LG2 menus :

MAIN MENU > Global settings > Auto-engage > Type config

MAIN MENU > Global settings > Auto-engage > Activation delay

*Sweep curve selection*

The last topic in an expression pedal setup, is the choice of the used sweep curve. One out of four configurable curves can be chosen separately for each expr.pedal setup. Configuration of the sweep curve shape itself is discussed in the next topic.

***Creating an expression pedal setup using the local LG2 menus***

See chapter 3.5.2 for a general description on how to create, edit, delete or move setup items. This description also applies to expression pedal setups. Here is how to reach the expression pedal setup configuration :

MAIN MENU > Current setup > Express. Pedals

When you click the Edit icon for an expression pedal setup, you will be able to scroll through following properties, which all have been covered in the text above.

NAME
MSG OR MACRO
- MACRO
or
- MESSAGE TYPE
- CONTROL NUMBER
- MIDI CHANNEL
VALUE AT HEEL
VALUE AT TIP
USE ENGAGE
ENGAGE VALUE
PRESET AT HEEL
PRESET AT TIP
SWEEP CURVE

***Doing the global pedal assignment using the local LG2 menus***

Global expression pedal assignment is done in following local menu :

MAIN MENU > Global settings > Expr.pedals

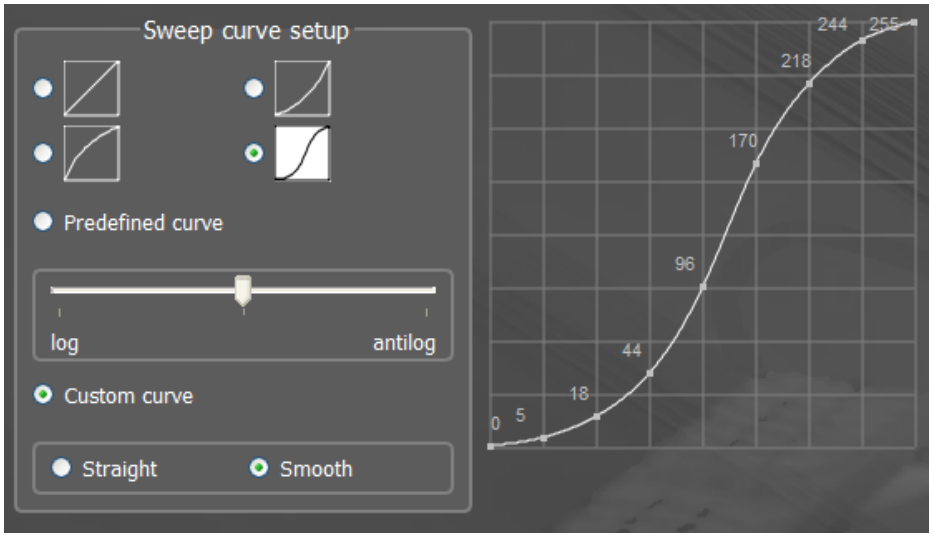
Of course you will first need to create the expression pedal setups in the “Current setup” menu mentioned above. Only after that, you will be able to do the global expression pedal assignment and select the default expr.pedal setup for each external pedal and optionally also for the rotary knob.

***Expression pedal sweep curves***

Expression pedals or volume pedals usually have one of 2 types of potmeters: a linear pot or a log pot. In a very rare case, a third type, “antilog” pot (also called C type pot), is being used. One type is optimized for volume control (as it is matched to the logarithmic response of the human ear toward sound pressure), another type is optimized for doing a linear parameter adjustment.

With the Little Giant, you can use any type of pedal to do any type of adjustment. Or you can use a single pedal to do different types of adjustments, depending on the currently selected preset. This is possible, because the sweep curve of the expression pedal can be digitally adapted. Up to 4 different curves can be defined and linked to any of the expression pedal setups. One of the curves (curve 4) even offers full 14-bit support, in order to take maximum advantage of the high resolution capabilities of PitchBend control.

LG2 ControlCenter offers an easy-to-use curve creation tool which lets you choose between a number of predefined curves, ranging from logarithmic, over linear, to an antilog curve. Apart from that, you can also finetune or adapt those curves to the actual behavior of your expression pedal, through the use of several editable reference points. The “smooth” curve option calculates a smooth curve running through all reference points.

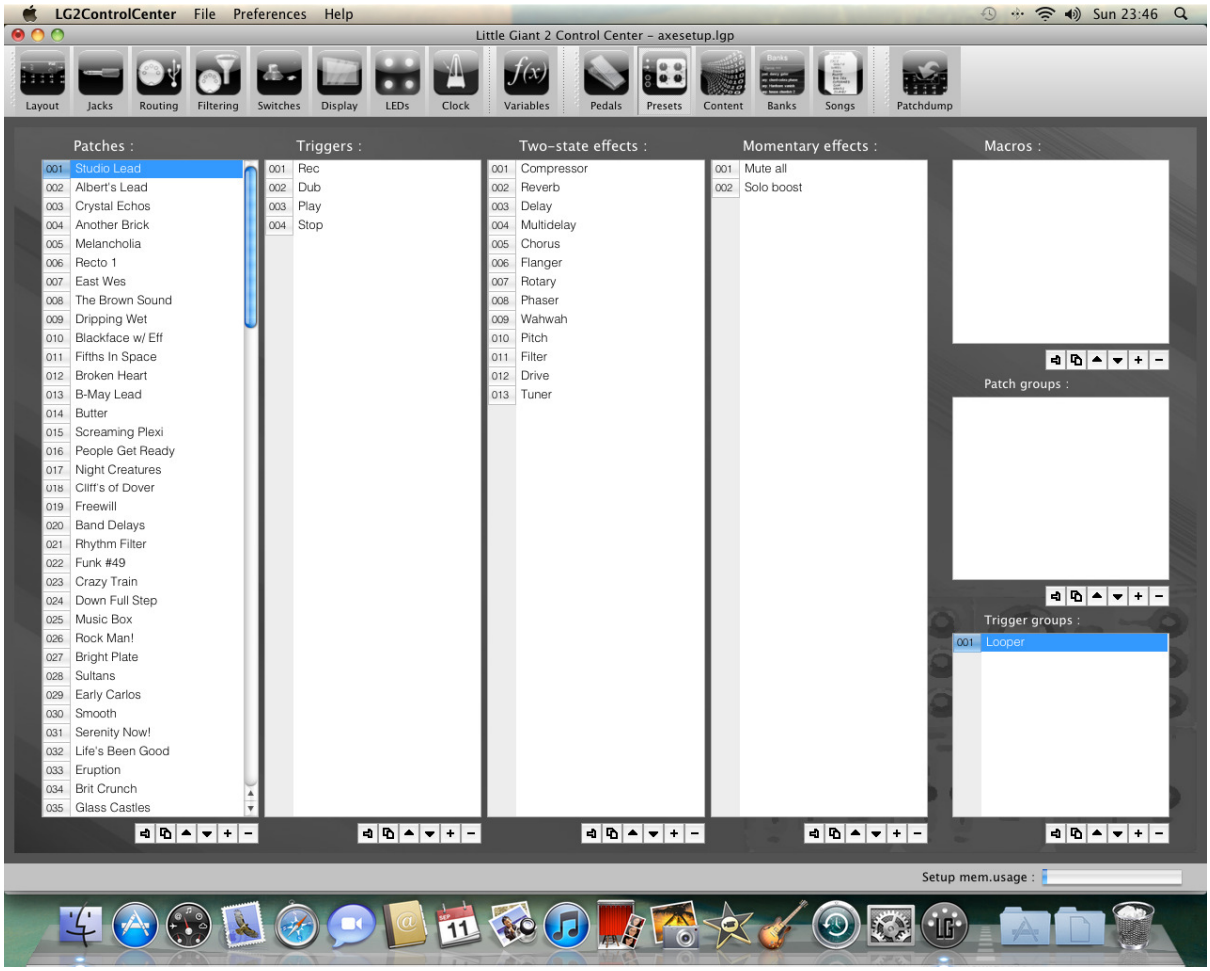



*Sweep curve setup in LG2 ControlCenter*

*Remark :* the different expression pedal curves can only be drawn on a computer, using LG2 Control-Center. This is not possible with the local setup menus of the LG2. By default, without any explicit curve setup, all sweep curves will be linear.

*Hint :* if you want to learn more about log pots (used in volume pedals) versus linear pots (used in expression pedals), we suggest to search the internet for the title “The Secret Life of Pots”. This will lead you to an interesting article on that topic, written long time ago by R.G.Keen.

## 9.15 The Presets tab page

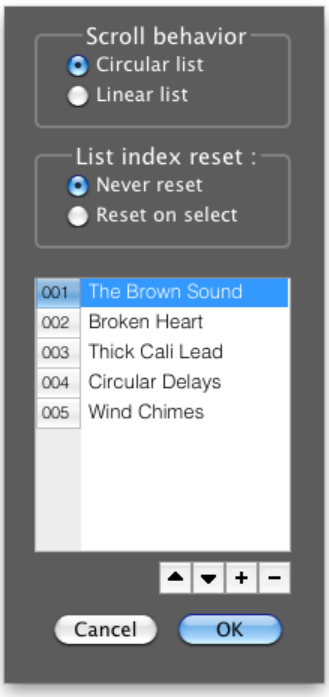



The presets tab page contains a major part of your setup : all patches, triggers two-state effects and momentary effects are listed here. Next to that, you also have a list for macros, patch groups and trigger groups. These different item types are all explained in chapter 8 about the LG2 setup structure.

While this tab page gives you an overall view on all 4 types of presets, the actual content of these presets is configured in the next tab page (the Content tab page, discussed in the next topic). It is good to know that you can easily swap back and forth between presets page and content page: keyboard shortcut F6 brings you to the next tab page, while F5 brings you back to the previous tab page. The Content tab page always shows you the content of the preset currently selected in the Presets page (although this Content tab page also contains the necessary navigation buttons to scroll through the preset lists, as you will see in the next topic).

The button with the little “hammer” beneath each preset list is the “edit” button. It brings you to the content page, exactly the same way as if you would click the big Content icon in the upper toolbar.

The patch groups and trigger groups have their own setup dialog, which pops up when clicking the edit button beneath one of the 2 lists. Setup of each of the two types is identical :




*Patch group setup dialog*

The setup of a patch group (or trigger group) is basically nothing else than defining a list of patches (or triggers). These lists will be reused in a next step of the setup, on 2 different places :

- in the bank setup you can link a patch group or a trigger group to any switch. As a result, each of the patches or triggers in the list will be selected sequentially with subsequent clicks on the same switch. A long click will make you jump back to the first patch in the list.

- In the song setup, you can optionally link a patch group to each song. This gives you the possibility to scroll through a number of patches during each song, by using a two switches which are programmed as “next preset” and “prev. preset” buttons (see chapter 10.11)

As you can see on the screenshot above, there are 2 extra options to be set for a patch group or trigger group. You can make a patch group a “circular list” or a “linear list”. This specifies the behavior when reaching the end of the list. A linear list will stop at the last patch, clicking the corresponding switch one more time will have no effect. A circular list jumps back to the start of the list after reaching the end.

A second option specifies whether you reset the index of the list when selecting another preset or not. If you specify “reset on select”, you can scroll through the patch group with one switch, but clicking a different patch or trigger switch will reset the patch group index. Selecting a two-state or momentary effect does not influence the patch group index, only a different *patch* or *trigger* will reset the index to the start of the group. Especially when choosing a “linear” list, youmight prefer to activate this “reset on select” option. Although, as mentioned before, you can also jump back to the start of the list by keeping the patchgroup switch pressed for longer than 1 second.

***Creating presets, macros, and preset groups using the local LG2 menus***

See chapter 3.5.2 for a general description on how to create, edit, delete or move setup items. This description applies to all types of setup items, so if you already edited the list of expression pedal setups, covered in a previous chapter, you will have no problem following the same logic for editing of the items mentioned in this chapter. The different items can all be found in the “Current setup” menu :

```
MAIN MENU > Current setup > Patches
                          > Triggers
                          > 2-state effects
                          > Moment. effects
                          > Macros
                          > Patch groups
                          > Trigger groups
```

After creating a new preset, you click the Edit icon to modify all of its properties. Those properties are identical for patches, triggers, 2-state effects and momentary effects :

```
NAME
MESSAGESTREAM 1
MESSAGESTREAM 2
```

The properties for a macro are very similar:

```
NAME
MESSAGESTREAM
```

When clicking the “messagestream” property, you can edit the MIDI messages being sent and GORDIUS commands being triggered by the preset or macro. But that is the topic of next chapter.

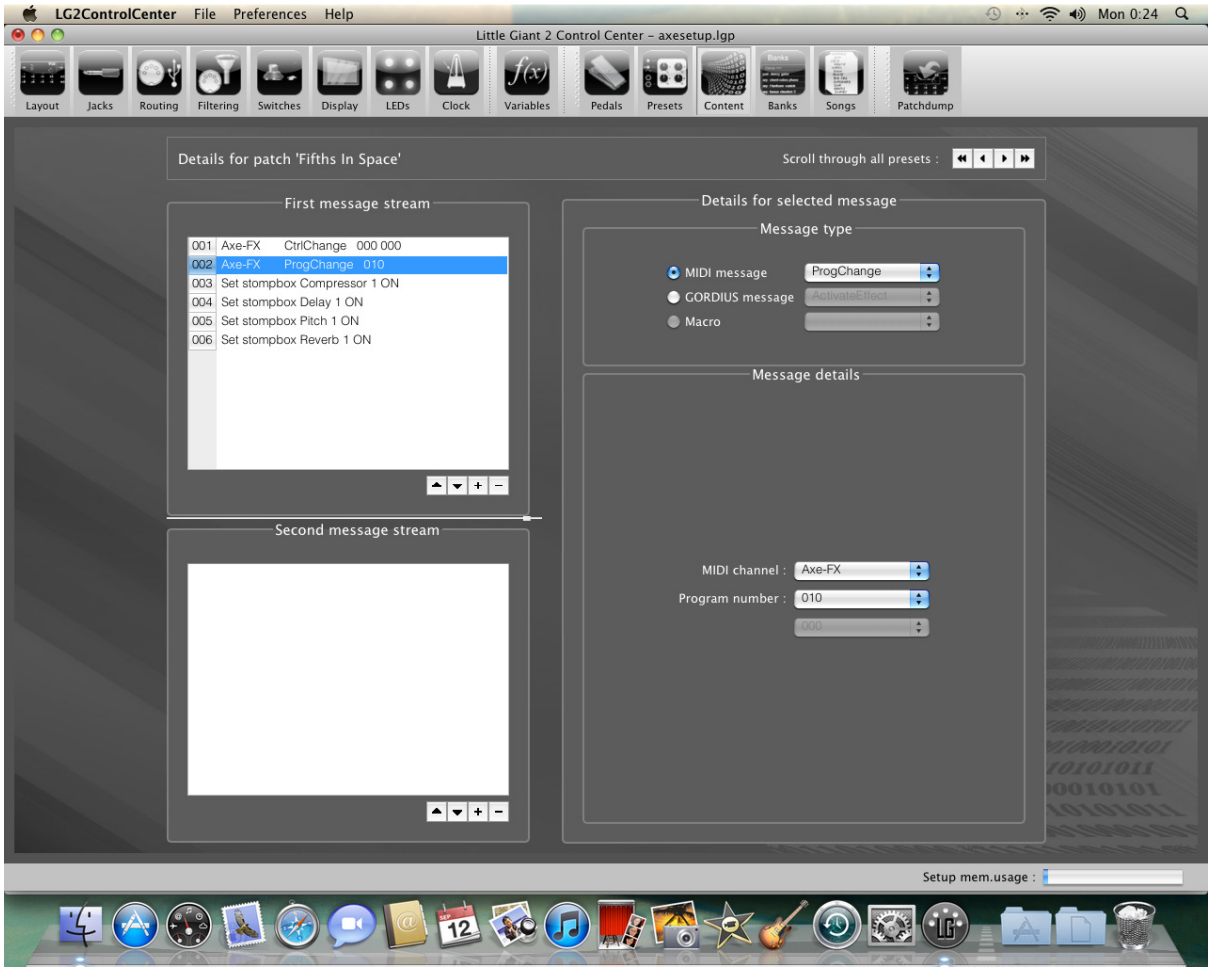
***Setup of the patchgroup and triggergroup content using the local LG2 menus***

The properties you can scroll through after clicking the Edit button on a patchgroup or triggergroup are :

```
NAME
SCROLL BEHAVIOR         (Circular / Linear)
LISTINDEX RESET         (Never reset / Reset on select)
PATCHES / TRIGGERS      (editable list)
```

You will recognize those properties from the description of the patchgroup setup dialog discussed above.

## 9.16 The Content tab page

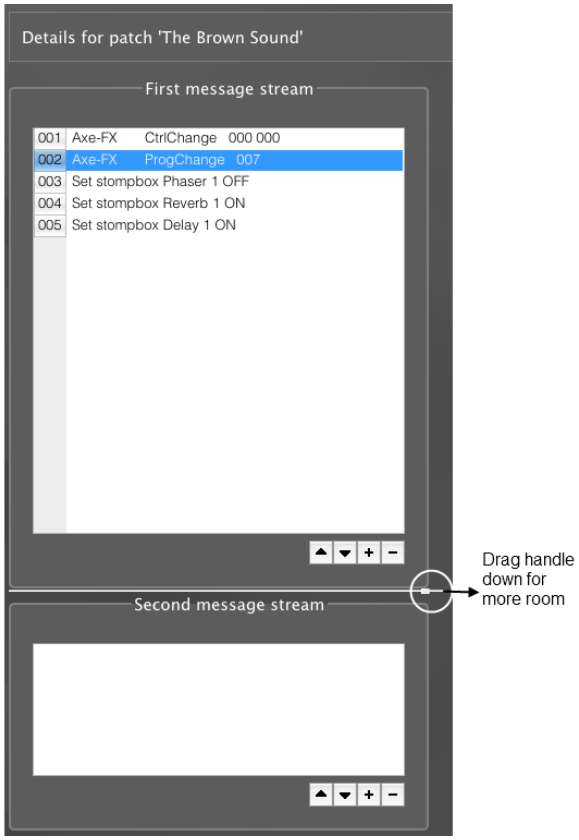



The Content tab page allows to edit the content of the first and second message stream for each of the presets. Chapter 8.4 explained when exactly the two message streams are being transmitted: first stream at switch press, second stream at switch release, except for two-state effects, which send the first or second stream alternatively on each switch click. Chapter 8.3 explained that a macro is just a set of messages, which can be reused as part of the content of any message stream. The content of a macro is edited on this same Content tab page. Only difference is that a macro contains only one message list, as opposed to the 2 message streams of a preset.

As was mentioned before already, a message stream can contain a mix of both regular MIDI messages and GORDIUS specific commands. There is a wide range of different GORDIUS commands, exposing an extended set of advanced features, as you will learn in chapter 10, a whole chapter dedicated to these commands.

The upper right corner of the Content tab page contains a few navigation buttons, which let you easily scroll through the content of all presets, without the need to return to the Presets tab page each time. The double arrows scroll through the different preset types : patches > triggers > two-state effects > momentary effects > macros. The next and previous buttons scroll through a list of presets one by one, and jump to the next preset list after reaching the end: after showing the content of the last patch, you jump to the content of the first trigger (if available), and so on.

For a regular setup the page has plenty of room to show the content of both message streams. However, if you have a long list of messages in the first message stream, and none in the second message stream, you can expand the upper list by taking the “grip” at the bottom of the upper list and drag it down. You can even drag it all the way down and completely hide the second list if you prefer.


Details for patch 'The Brown Sound'
First message stream
001 Axe-FX CtrlChange 000 000
002 Axe-FX ProgChange 007
003 Set stompbox Phaser 1 OFF
004 Set stompbox Reverb 1 ON
005 Set stompbox Delay 1 ON
Drag handle down for more room
Second message stream

*Resizable message lists*

The buttons at the bottom of each list speak for themselves: you can add or remove a message, and move a message up or down. When adding a message, it is by default a “ProgChange 00” message, which can then be modified to what it should be using the detail screen at the right.

### *MIDI messages*

The Little Giant supports sending ANY of the available MIDI message types defined by the MIDI standard. Some of the messages, like ActiveSense, will probably never be used in your setup. When selecting a MIDI message type in the selection dropdown box, the “Message details” pane adapts to this message type: 0, 1 or 2 extra data bytes can be specified, depending on the type of message. Also the MIDI channel selection is only available for certain message types.

***SysEx*** (System Exclusive) is a very specific type of MIDI message: a SysEx message can consist of a large number of data bytes. The MIDI standard doesn't specify a maximum allowed length. Since SysEx is being used for things like patchdumps or firmware downloads, the size can indeed be very large. It would not make sense to send this kind of very large data dumps from your LG2, however, shorter SysEx messages are supported by several devices to adapt certain advanced parameters. In many cases it is even the only way to get full control over a device from your floorboard, so the SysEx support of your LG2 may unlock functionality which you don't have access to with other controllers.

The length of SysEx messages programmed into your LG2 preset content is not strictly limited. When you select SysEx as message type, a large text input field will appear, which lets you enter the full SysEx message content. You have the choice between hexadecimal notation (typing values between 00 and 7F) or decimal notation (typing values between 000 and 127). As the user interface indicates, you don't need to type the opening and closing bytes for the SysEx message (F0 and F7). These are added automatically.

***GORDIUS commands***

As was mentioned a few times already, the LG2 offers extended functionality through the use of "GORDIUS commands", which can be inserted at any place in a preset message stream. You add a GORDIUS command exactly the same way as you add regular MIDI messages. Select the command type from a dropdown box in the "Message type" pane, and fill in all details for this command in the "Message Details" pane. Since we are talking about advanced functionality here, we have a detailed description of each of the GORDIUS commands in a separate chapter below.

***Macros***

A macro is a set of reusable messages. You define the content of a macro in this same Content tab page, and after that you can reuse the macro on several places in the preset setup, by adding the macro to the message stream of a preset. This is done the same way as adding a MIDI message or GORDIUS command to a message stream: you will notice the third option "Macro" in the "Message type" selection pane.

*Attention :* in principle it is possible to use macros in the content of a macro too. You will understand that this must be done with the necessary caution, so that you don't create an "infinite loop" caused by a macro activating itself. The LG2 firmware is capable of detecting this kind of setup error, and will display a "Loop detected!!" message, but obviously the unit will not behave the way you want it when such an unwanted loop is introduced.

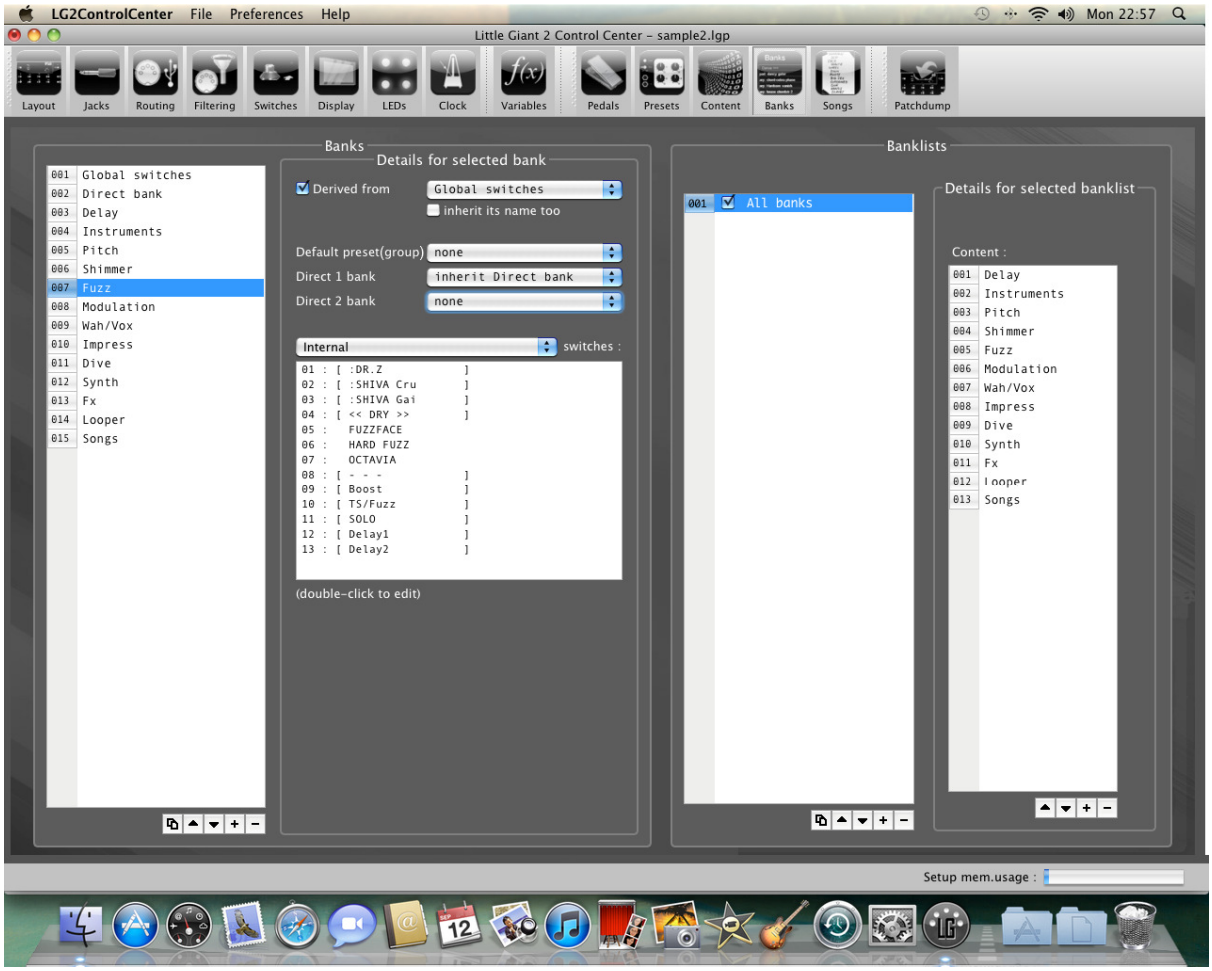
***Setup of the preset content using the local LG2 menus***

Clicking a "message stream" property in the setup menu of a preset or macro brings you to the setup screen for the messages list, a regular list menu with add, remove, move and edit buttons. When clicking the edit button on one of the messages in a message stream, you can scroll through the properties of that message :

```
COMMAND TYPE  ( MIDI MESSAGE / GORDIUS COMMAND / MACRO )
...           (properties depend on chosen command type)
```

- if you have selected "MIDI message" as command type, you will be able to specify the MIDI message type and the MIDI channel and data bytes, when applicable.
- If you have selected "GORDIUS command" as command type, you can choose the required GORDIUS command from a long list, and proceed with filling in the different properties, depending on the chosen command. If you have any doubt about the meaning of a certain setting, refer to chapter 10, which describes all commands in more detail.
- If you have selected "Macro" as command type, all you need to do is select the macro which you want to insert in the message stream.

## 9.17 The Banks tab page




This tab page contains the setup for both banks and banklists. At the left side of the page, you can add banks to your setup. At the right side you can organize these banks in several banklists. The LG2 has a banklist display mode which you can use to browse through the default banklist. Therefore, creating several banklists can be a way to provide different views on your complete setup. Depending on the situation (live gig, jam session, studio work… ) you might select one out of several completely different subsets of your setup. You select a subset by making the required banklist the default one. In ControlCenter, you do this by ticking the checkbox next to that banklist. In the local LG2 menu, each banklist has a property “Is Default” which can be selected. The “navigate” commands, which can be linked to a switch, also offer the possibility to change banklist with a footswitch. See chapter 10.11.

One important thing to remember is that you need at least one banklist in your setup in order to be able to browse through any banks on your LG2. If, after downloading a setup to your unit, it looks like the up and down switches don’t do anything, this is the first thing to check: does your setup contain a default banklist ?

***Banklist setup***

Setup of banklists is very straightforward : you just give the list a relevant name, you fill it with banks, and you use the up/down arrows to specify the correct order of banks. That's it.

***Bank setup***

The creation of banks needs some more explanation. The principle is easy to understand : each bank contains a mapping between each of the LG2 switches and one of the available presets or presetgroups. However, the bank setup contains a clever mechanism of "inheriting" settings which we will explain in more detail first.

***Bank "inheritance" system***

The term "inheritance" is widely used in programming environments: in that context, any object can "inherit" from a parent object, which means that it automatically gets all the same properties as that parent object, without the need to specify everything from scratch. You can also say that the object is "derived from" the parent object, another typical programming term. But there's more: after "inheriting" all properties from its parent, the object might want to make a few exceptions: some inherited properties can be "overridden", which means they do no longer reuse the inherited value, but have their own specific value assigned instead.

This same principle of deriving and overriding can be applied on a bank setup of the Little Giant. There are two situations where this type of inheritance comes very handy in a bank setup :

1. Suppose we have a typical guitar floorboard layout, with the lower switch row containing patches, and the upper row containing effect stompboxes. You might want to have a different set of effects available for each selected sound. This can be accomplished by creating several "variations" of the same bank, with always the same patches on the lower row but different effects on the upper row. Now, each time you select a patch on the lower row, you can automatically activate a different bank out of those bank variations. (This can be accomplished with one of the GORDIUS navigation commands which will be discussed in chapter 10.11). All of the bank variations can "inherit" their lower row switch assignments from a common bank, but "override" one or more of the upper row effect switches with specific effects for each sound. The inheriting mechanism has an option to inherit the bank name too, so when switching between the different bank variations, the bank name will not change and it will look like you stay within the same bank, but with varying effect switches.

2. It is very common to have a few "global" switches in your switch layout. These are switches which keep the same function, whatever bank you are currently in. Typical examples are a "Tuner" switch or "Mute" switch, a TapTempo switch, etc.. You could of course assign these functions to the same switch in each of the banks, but it is more straightforward to define a "Global" bank, which contains nothing but those globally available switch assignments, and then let all regular banks "derive" from that global bank. Each time you create a new bank and specify that it is derived from the global bank, you will automatically get the global switch assignments for free. Of course this doesn't stop you from "overriding" any of the global switch assignments in a certain bank, and have a specific function linked to the otherwise global switch in that one bank.

These are two very common situations where the inheritance mechanism can help us keep the bank setup nice and clean. Therefore, the LG2 bank setup supports 2 levels of inheritance. This means that some banks can inherit from other banks, while these other banks on their turn inherit from a global bank. The global switch assignments will automatically "ripple through" 2 levels deep, and will be available even in the banks which are not directly derived from the global bank.

Inherited switch assignments are shown between square brackets in the switch assignment table, as can be seen on the screenshot at the beginning of this chapter.

The first option in the bank details pane is this "Derived from…" option which specifies whether the current bank is derived from another one, and – if that's the case – whether you want the bank to inherit the bank name of its "parent" bank too.

***The default preset of a bank***

You can select any patch or trigger to be the "default preset" of a bank. This means that the preset will be selected automatically when the bank gets selected. This is a powerful way to initialize certain settings in your gear before starting to use a certain bank. If you don't need this default preset functionality, just choose "none". If the current bank is derived from another global bank, you can "inherit" a global default preset. This would allow you to do the same initialization each time before selecting a new bank.

In case you make use of "patch groups" (or "trigger groups"), you can also select such patch group as default for a bank. Just like with a regular patch, this group will automatically be selected (as if you would have clicked its button), which means that the first patch within this group will be automatically activated.

***The Direct 1, Direct 2 (and Direct 12) banks***

The "direct bank" switches of the Little Giant allow you to reach a common set of functionality from any bank in your banklist. A single click selects Direct Bank 1 or Direct Bank 2, another click returns to the current bank. Also switching between Direct Bank 1 and 2 can be done with a single click.. The 2 direct bank switches have a LED which indicates if Direct Bank 1 or 2 is currently active.

While the LGX2 has 2 dedicated Direct Bank switches, the LG2 has 2 switches which can be configured to be used either as regular preset switch, or as Direct Bank switch. Both switches can be configured independently, so you can choose to use one single Direct Bank too.

You can optionally choose to use three direct banks instead of two. The third bank is called "D12". When using 3 direct banks, you will sometimes need 2 clicks to reach one of the 3 banks. Click D1 to go from regular bank to D1 bank. Click D2 to go from D1 to D12. At this moment both the D1 LED and the D2 LED will go on (which is never the case in the scenario with only 2 direct banks). From the D12 bank you can go back to D2 by clicking the D1 switch (which will switch the D1 LED off). And so on.

*See chapter 9.9 for setup of the global options related to direct banks.*

The bank setup pane contains two selection boxes for Direct 1 bank and Direct 2 bank (and a third D12 bank selection box if this option has been enabled on the global switch setup page). When a bank is derived from a global bank, you can choose to inherit the "Direct 1 bank" and "Direct 2 bank" settings from that global bank. In order to do so, select the entry "inherit : …." In the selection box. The entry will mention which bank exactly you are "inheriting" from the global bank. Actually, the chance is great that you will indeed want to use "global" direct banks, which are specified in a global bank, and then inherited in all other banks by "deriving" from that global bank. After all, this is the main reason to use direct banks: in order to reach a few commonly used (global) functions from any bank with a single click. On the other hand it is a powerful feature that you can specify a different direct bank for each "normal" bank if you want to. This is also a way of extending each bank with specific extra functionality which is only one click away.

***Switch assignment table***

The main part of the bank details pane is the switch assignment table. Right above this table, a dropdown box lets you chose the type of switches to display :

- ***internal*** switches are the 10 switches built into your LG2 or the 13 preset switches of your LGX2. The LGM2 module doesn't contain any internal switches

- ***slave*** (1…3) switches can only be assigned when you have activated the use of one or more slave controllers in the Layout tab page. 10 switches are available for each slave controller.

- ***external*** switches are the ones connected to the 4 stereo jacks of the LG2. They are numbered 1A & 1B through 4A & 4B. If you connect mono switches, only the "A" switch assignments are relevant.

You edit a switch assignment by double-clicking the corresponding entry in the table. This pops up a dialog, which lets you specify if a switch needs to stay empty or if it needs to inherit the setting of its "parent" bank, or else you can select a patch, trigger, two-state effect, momentary effect, patch group or trigger group to be linked to the switch.

***Switch inheritance in the Direct 1 and Direct 2 banks***

We just explained the pretty complex but powerful principle of "inheriting" switch assignments from a "parent" bank. The same principle is used in its own peculiar way when it comes to direct banks. When a bank is used as "direct" bank, it inherits its switch assignments from the currently selected "regular" bank. Let's explain this with a small example :

Suppose we have bank A with a number of patches on the lower row and a number of heavily used effects on the upper row. We define a bank with less frequently used effects on its upper row, and with the lower row of switches set to "inherit". Let's call this bank "More effects". We select this bank as direct bank 1 for bank A. When we are using bank A, and then we click the "D1" switch, the upper row of effects is replaced by the less frequently used effects of the "More effects" bank. However, on the lower row we can still access the patches of bank A, even with "D1" selected. Indeed, the direct bank inherits the switch assignments of the currently selected regular bank. If we scroll to bank B, which has the same direct bank, the same principle applies : the lower row of bank B stays accessible after activating the direct bank.

In other words, thanks to the inheritance mechanism which this time lets direct banks inherit settings from the current bank, we can actually use "partial" direct banks (1 switch row only for instance). A very flexible system! If you don't like this inheriting principle on direct banks, just specify "none" as assignment for the not-used switches, and they will no longer inherit anything, but will stay empty instead.

***Assigning a patchgroup to a switch***

Let us briefly repeat here what we use patchgroups (or triggergroups) for in the bank setup. If you link a switch to a patchgroup, you can sequentially step through the patches of that group by clicking the same switch several times.

***Doing a bank setup using the local LG2 menus***

Again, managing the list of banks through the local menus is completely in line with editing any other list of items, and is described in chapter 3.5.2

MAIN MENU > Current setup > Banks

When clicking the “Edit” button, you can scroll to all properties of a bank and edit them :

```
NAME
DERIVED FROM
INHERIT NAME      (Show own name / inherit bankname)
DEFAULT PRESET
D1 BANK
D2 BANK
D12 BANK
SWITCH xx
```

“SWITCH XX” stands for a list of all available switches in the current layout (exact list depends on type of controller, connected slave controller, and configuration of the input jacks). Clicking a switch assignment opens a selection box which lets you choose the type of item to be linked to the switch:

```
[none]
[inherit]
Patch
Trigger
Two-state effect
Momentary effect
Patch group
Trigger group
```

And after clicking the required item type, you can choose one out of the total list of available items.

***Doing a banklist setup using the local LG2 menus***

Doing a banklist setup through the LG2 menus is as straightforward as it is in ControlCenter :

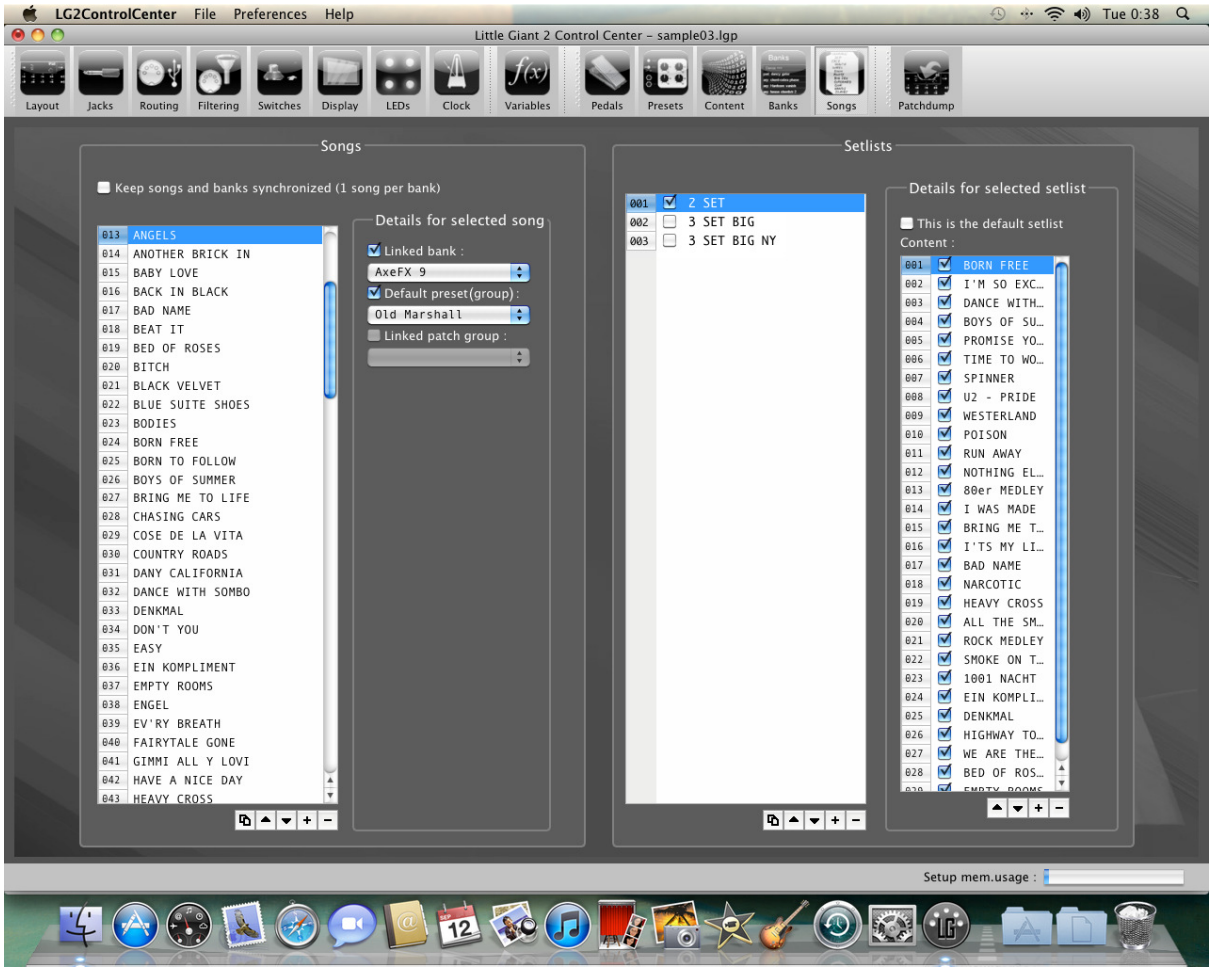
MAIN MENU > Current setup > Banklists

With each banklist having only 3 properties :

```
NAME
IS DEFAULT
CONTENT
```

Clicking the “content” property allows you to edit the list of banks, again using the regular add / remove / move buttons.

## 9.18 The Songs tab page




On this tab page you can define songs and setlists. This is an optional part of your setup: it is perfectly possible to use all the features of your LG2 mentioned so far, without creating any song or setlist. However, for those doing regular live gigs, playing a certain predefined set of songs, the setlist functionality definitely is a very powerful add-on. It allows you to scroll through your setlist and have a view on which songs to play next. A nice alternative for the paper setlists usually floating around on stage.

### *Songs versus Banks : the "linked bank" of a song.*

At any time you will want your LG2 to have a switch layout and a set of sound controls available which fits the current song. This switch layout is created in the bank setup discussed in previous chapter. In the song setup it is just a matter of linking an existing bank to each song, using the "linked bank" dropdownbox. When you proceed to the next song in a setlist, the bank linked to that song will be automatically loaded and you are ready to go.

It is possible to reuse the same bank for many songs (which all need the same set of controls). On the other hand, if different songs all require a different control set, it is also possible to have a dedicated bank for each song. In that case, you might find it overhead to do a full bank setup first, creating as many banks as you have songs in your setlists, and then go to the song setup and again create this full list of songs, each linked to its own bank. The song setup has a handy option to help you in this scenario: the option "***Keep songs and banks synchronized***". When you activate this option, the regular add/remove/up/down buttons beneath the list of songs will disappear. The song list will be created automatically for you, and kept in sync with the list of banks created in the previous tab page. In other words, just do the bank setup as described in previous chapter, and name the banks after the song they are intended for. When you then go to the song setup, the list of songs will be created or updated automatically for you, and also the "Linked bank" property will be filled in automatically for each song. All you need to do is add the song specific extra info, which basically is just the optional "default preset" and "linked patchgroup" properties mentioned below.

***Default song preset***

The previous chapter already introduced the concept of a "default preset" which can be defined for each bank. As you can guess, the default song preset is exactly the same. You can do song specific initializations (like setting the tempo of a click-track, loading a certain backing track, etc…) in a preset which is specified as default preset for that song. As you scroll through your setlist, the default preset of each song will be activated automatically. The choice between using default song presets or default bank presets is obvious: if the initialization is specific for each song, use the default preset property in the song setup. If the initialization is specific for each bank layout, rather use the default preset functionality in the bank setup.

***Linked patchgroup***

Most of the time, you will use the approach for organizing your MIDI controller which has been mentioned above already: create a bank which has the desired preset layout for the current song, and link that bank to the song. This song specific layout typically allows you to activate the sounds used during this song with consecutive switches on your floorboard, while also having the necessary effect stompboxes available on other switches. A different approach, which results in a very compact switch layout, is to use one or two switches to scroll through the necessary presets for the current song. You can name these switches the "next" and "prev" switches. They scroll through the sounds for the current song, similar to how the up / down switches scroll through the banks of your setup. Instead of laying out the different presets next to each other, you "stack" them on the same switch, and each click on that switch will activate the next one in the row.

In order to do this, create a patchgroup which contains the necessary presets, and link that patchgroup to the song. The "next" and "prev." switches can be created by linking a dummy preset to them, which contains the GORDIUS command "goto next preset within the song" and "goto prev.preset within the song".

*These commands are part of the "Navigation" commands, discussed in detail in chapter 10.11.*

When using this kind of "compact layout" approach, you could imagine that even one single bank, containing the next/prev switches and some general effect switches, might be sufficient to control your rig during a live performance.

***Specifty a patchgroup as default.***

A special case worth mentioning here is the possibility to specify the patch group, linked to a song, as its "default presetgroup" too (see "default preset" setting mentioned above). This allows you to automatically activate the first preset in the patch group when you browse to a song.

***Setlist setup***

Setup of setlists is again very straightforward (and similar to banklist setup): you just give the setlist a relevant name, you fill it with songs, and you use the up/down arrows to specify the correct order of the songs. Just like with banklists, you need to specify one of the setlists to be the "default" one by ticking the checkbox next to it. That's the setlist which will be displayed on the LG2 display (in setlist display mode) and which you will scroll through with the *up / down* switches.

You will notice one difference compared to the banklists : once you start adding songs to a setlist, they will appear in the setlist with a ticked checkbox next to their name. Indeed, you can just "untick" these checkboxes in order to temporarily skip one or more songs in the setlist. Imagine you decide to skip a few songs minutes before the start of a live gig. Thanks to this "skip" option, which is available in the local LG2 menus too, you can easily adapt the setlist and mark the songs as skipped. Afterwards, you can again clear the "skipped" state of these songs to return to the orginal situation. Much easier than removing the songs completely from the list, with the need to add them again later on.

***Doing a song setup using the local LG2 menus***

You can reach the song setup as follows :

MAIN MENU > Current setup > Songs

Editing the list of songs is again identical to editing any other list. When clicking the "Edit" button, for one song, you can scroll to all properties of that song and edit them :

NAME
DEFAULT PRESET
BANK
LINKED PATCHES

***Doing a setlist setup using the local LG2 menus***

… is identical to the banklist setup, with one exception, mentioned below

MAIN MENU > Current setup > Setlists

NAME
IS DEFAULT
CONTENT

You will notice something different when you click the "content" property to edit the list of songs. When you click any song, the add / remove / move menu buttons pop up, but there's one extra button here: the "circle" icon lets you select or unselect a song, which is the equivalent of ticking the song checkbox in the setlist setup of ControlCenter: a filled circle next to a song means the song is currently active in this setlist, a hollow circle means that the song is currently skipped. When you scroll through the setlist with the *up/down* switches, you will never notice the "skipped" songs.

*You can see a screenshot of this toggling menu in chapter 3.5.8 about the LG2 internal menus.*

# 10 The GORDIUS command reference

## *10.1 Overview*

Many advanced features are available in the LG2, they are triggered by adding one or more GORDIUS commands to the message stream of any preset. LG2 ControlCenter gives you the choice of following GORDIUS command categories :

```
ActivateEffect
ActivateContCtrl
Tempo
Delay
Sweep
Loop
Conditional
Variable
SetDirectBank
Navigate
SwitchAssign
DirectSelect
KeypadMode
DisplayMode
DisplayTuner
ControlLED
ControlRelay
SetRouting
Suspend
```

*LG2 ControlCenter : GORDIUS command categories*

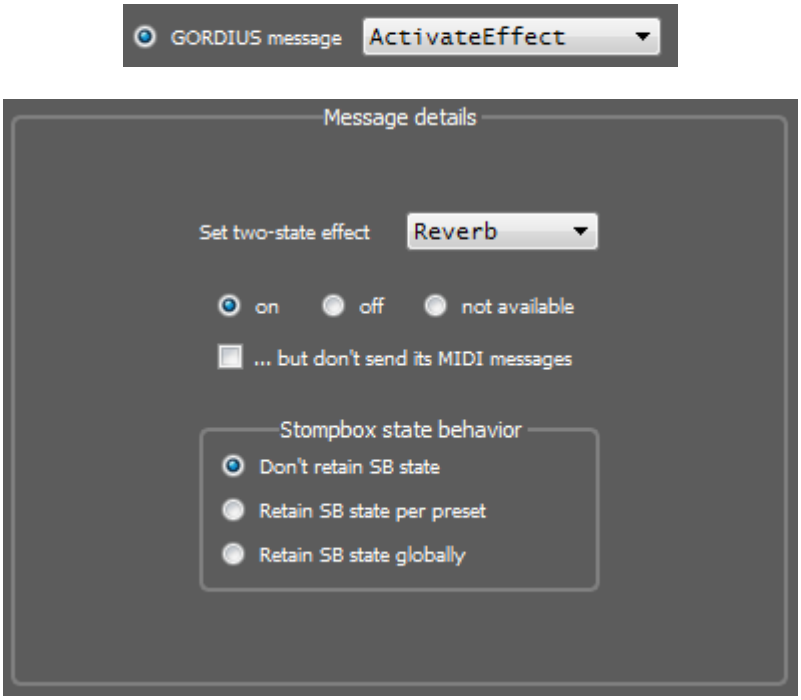
After choosing one of the categories, the corresponding command detail pane appears, where further choices can be made. In the LG2 internal menus, you won't find the same categories. There you immediately select the actual GORDIUS command. All commands available in the LG2 setup menu are listed below. They have been grouped in line with the categories mentioned above.

```
ActivateEffect

ActivateContCtrl

Metronome
TapTempo
GlobalMetronome
GlobalTapTempo

BlockingDelay
NonBlockingDelay
SyncedBlockDelay
SyncedNonBlDelay
LongPressDelay
LongReleaseDelay

FineSweep
CoarseSweep
NonBlockingSweep

RepeatFrom
RepeatTill

If(Var)
ElseIf(Var)
Else
EndIf
IncVariable
DecVariable
ShowVariable
SetVariable
SetMidiChannel
SetRandomRange

SetD1Bank
SetD2Bank
SetD12Bank
ActivateD1Bank
ActivateD2Bank
ActivateD12Bank
ActivateRegular

ActivateBank
GotoNextBank
GotoPrevBank
RestoreBank
ActivateSong
GotoNextSong
GotoPrevSong
RestoreSong
ActivateBanklist
GotoNextBanklist
GotoPrevBanklist
RestoreBanklist
ActivateSetlist
GotoNextSetlist
GotoPrevSetlist
RestoreSetlist
NextSongPreset
PrevSongPreset
GotoNextPreset
GotoPrevPreset
RestorePreset

AssignSwitch

SetDirPresetMode
SetDirBankMode
SetDirSongMode

SetDirectPCMode

SetDisplayMode
NextDisplayMode
PrevDisplayMode

SetTunerDisplay

BlinkLED

CloseRelay
OpenRelay

SetRouting

SuspendXmission
```

*LG2 internal menus : GORDIUS command types*

Each of the different command categories and their according configuration options are discussed in the following topics.

## 10.2 Activating effects




When you select a patch, you might want to activate or deactivate certain effects along with the patch activation. You can do that by adding one or more ActivateEffect commands to the patch message stream.

### *3 different effect states*

You can choose 3 possible states for the effect : *on*, *off*, or "*not available*". The first two are obvious. "*not available*" means that the effect is actually removed from the bank layout. This will be best noticeable if you have your switch LEDs configured to be dimmed for stompboxes in the off state (see chapter 9.11) When you have an effect on switch 1, and you select a patch which forces the effect state to on, the LED of switch 1 will go on. If you force the state to off, the LED will turn "dim" to reflect this. If you set the effect to "not available", the LED will go off, and clicking switch 1 will no longer cause any MIDI message transmission.

### *Transmitted MIDI messages*

When the state of an effect is forced to *on* or *off*, the corresponding MIDI message(s) will also be sent in order to bring the controlled effects device in the correct state. Unless you select the option "*don't send its MIDI messages"* : in that case the switch LED will change as described, but no MIDI will be transmitted. This option can be interesting when the controlled effects processor has patches with programmable effect blocks embedded. The "ActivateEffect" messages then serve to bring the effect LEDs on the LG2 in sync with the effect blocks of the selected sound. No need to send any extra MIDI apart from the patch select message, since the effect states are already initialized by the effects processor itself.

***Stompbox state behavior***

The default behavior of the stompboxes is that they are initialized in the specified *on* or *off* state each time you select the patch.

However, you might prefer to remember the last state of all effects on a patch per patch base. Let's explain with an example :

- Patch A has a Delay effect activated and a Chorus effect not activated. This is how the 2 ActivateEffect commands are programmed into the Patch A message stream.
- While playing with patch A selected, you activate the Chorus.
- Then you switch to different sound for a solo for instance
- When you now return to patch A, you want the Chorus again activated, because that's the sound you were using before. However, patch A does have a command which switches the Chorus effect off…

In this case you can obtain the desired behavior by selecting the option "*Retain SB state per preset*". If you want to clear the SB state changes for the current preset, just click the preset switch a second time. This will revert all stompbox states to the initial settings as programmed in the ActivateEffect commands.

A third option is to "*retain the SB state globally*". Now the stompbox state will be initialized only the very first time that a preset activates or deactivates the effect with an ActivateEffect command. From then on, you can switch the effect on or off, and its state will no longer change when changing patches. Each effect will act like an independent stompbox.

You may wonder what's the use of the "*ActivateEffect*" messages in this case, since you store the effect states globally and thus make them independent from those ActivateEffect messages! Indeed, it's much easier not to program any effect states in the presets and use the effect switches independently. However, some sound modules or guitar processors store effect states inside their patches. Selecting such a patch will automatically activate or deactivate the effects as they are programmed in the device. Thanks to the ActivateEffect messages and the "*retain SB state globally*" option, your LG2 can now override the effect states programmed in your device, and force the latest effect states, by resending the effect (de)activation messages with their globally retained last states after each patch select.

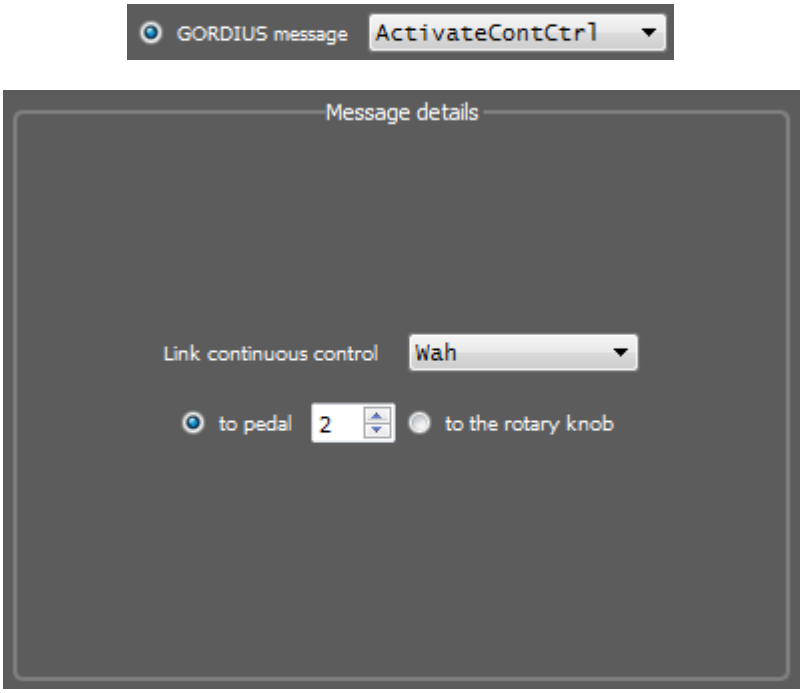
***Setup through the local LG2 menus***

Add GORDIUS command `ActivateEffect`

This command has following properties to set :

```
2-STATE EFFECT    (choose from list)
EFFECT STATE      (on/off/not available)
STATE CHANGES     (don't store/store in preset/store globally)
DON'T SEND MIDI   (Send MIDI msgs/Don't send MIDI)
```

## 10.3 Activating continuous controls




Somewhat similar to the ActivateEffect command, this command lets you modify the expression pedal function when selecting a certain preset. You can specify the expression pedal setup to be used by each of the 8 expression pedals (4 pedals connected to the input jacks, and 4 more available through connected slave controllers) . You can even link an expression pedal setup to the rotary knob of your LG2. This turns the rotary knob into a realtime MIDI control knob.

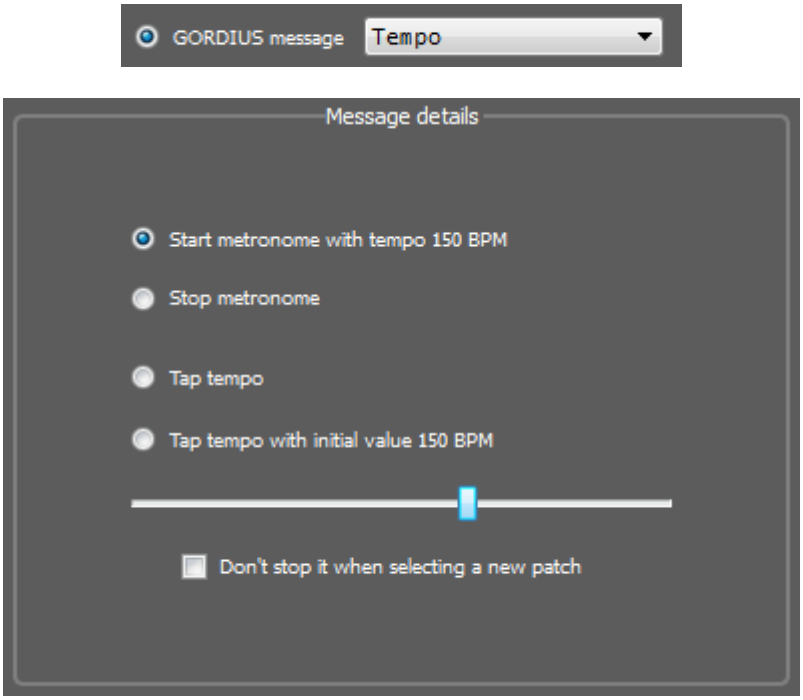
***Setup through the local LG2 menus***

Add GORDIUS command `ActivateContCtrl`

This command has following properties to set :

```
PEDAL OR ROTARY   (Expression pedal/LG2 rotary knob)
PEDAL NUMBER      (1-8)
EXPRPEDAL SETUP   (choose from list)
```

## 10.4 Metronome and TapTempo




### *Metronome*

Any switch can start a metronome with specified BPM. The LEDs tab page (chapter 9.11) allows you to specify which LED(s) will show the metronome tempo, while the Clock tab page (chapter 9.12) contains some options to send a MIDI message on each beat of the metronome.

By default, the metronome will stop as soon as you select another patch, unless you select the option "*don't stop…*" In that case, you will need to program the command "stop metronome" on one of the footswitches and use that switch as a stop button.

### *TapTempo*

The TapTempo functionality is very similar to the Metronome functionality, especially when you activate TapTempo with a certain initial tempo. In that case, a metronome is started with the given tempo, but the important difference is that you can adapt the tempo by clicking the TapTempo switch a few times in the new rhythm. This allows you for instance to "track" the tempo of your drummer by tapping, or to adapt an initial tempo to exactly match a backing track for instance. Just make sure to slowly move from the programmed tempo to the new tempo. Sudden tempo changes will be ignored. All options for LED flashing or sending MIDI messages are available just like for a metronome.

When you don't specify an initial BPM for the TapTempo message, the first 2 clicks will define the initial tempo. The LG2 display will show you the calculated BPM of the clicked tempo. Remember the options in chapter 9.12 about sending a MIDI Start message. These can be interesting when using a TapTempo switch to send a master MIDI Clock.

***Setup through the local LG2 menus***

Add one of following GORDIUS commands :

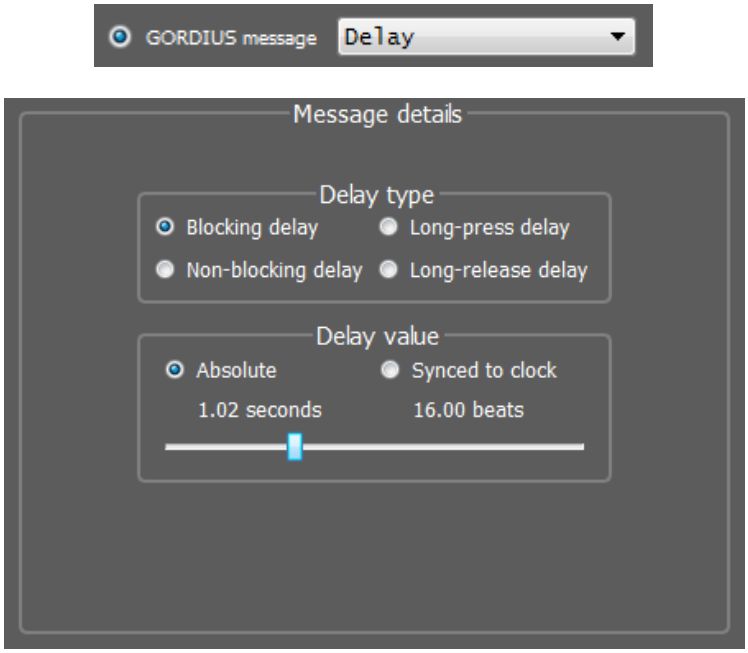
```
Metronome
TapTempo
GlobalMetronome
GlobalTapTempo
```

These commands all have 1 property to set :

```
BPM VALUE
```

Choose a metronome message with BPM value 000 in order to stop a running metronome.
Choose a taptempo message with BPM value 000 if you want to define the tempo with a few taps.

## 10.5 Adding delays




The delay command is a very handy command which can be interesting in many different situations. You will probably use this command when you start experimenting with “loops” for instance (see 10.7) But in some cases it may even be necessary to insert a small delay between regular MIDI messages, in order for the controlled device to work correctly. For instance it is known that some effect controllers need some time after receiving a ProgramChange to initialize the selected sound. If you would send some additional ControlChange messages to activate certain effects right after sending the ProgramChange, these CC messages might be ignored if they come too quickly (even though the LG2 is fully compliant with the MIDI standard with regards to communcation speed). Just insert a small delay between PC and CC messages in order to avoid this type of problems.

***Blocking vs. non-blocking delays***

A blocking delay will “freeze” the LG2 for a short period of time, before proceeding to the next message in the stream. This is typically what you will use in the scenario’s described above. A non-blocking delay on the other hand allows you to continue using the LG2 while the delay is running. Also, a non-blocking delay has a much wider range: while a blocking delay can be maximum about 3.3 sec long, a non-blocking delay can run for 25 seconds.

***Synced vs. non-synced delays***

A synced delay is expressed in “beats” instead of seconds. It uses an incoming MIDI clock or internal clock (metronome or taptempo) as reference. Therefore the actual delay in seconds will depend on the tempo of the incoming clock. A synced delay allows you for instance to activate a certain effect for a number of beats only. Just be aware that the delay will block if no incoming clock is available to count the beats.

***Long-press and Long-release delays***

Although they have a somewhat cryptic name, you will soon understand these delay types offer you some very interesting functionality. They allow you to link 2 different actions to the same footswitch, and perform one of both actions, depending on how long you click the footswitch !

Let's keep our example simple. Suppose you have a preset containing following MIDI messages :

First msgstream :
- LongPressDelay 1 second
- Channel01 ProgChange 02

Second msgstream :
- Channel01 ProgChange 01

What's specific about the longpress-delay : if you "cancel" it by releasing the footswitch before the delay is finished, none of the messages following the delay message will be sent. On the other hand, if you do keep the footswitch pressed for the whole duration of the delay, all subsequent messages in the first message stream will be sent, but all messages in the second message stream will be canceled. As a result, with our small example setup a ProgChange 01 message will be sent on release of the switch, if you click it shortly. If you keep the switch pressed for 1 second, a PC 02 message will be sent instead.

The "Long-release" delay is very similar. It acts the same as described above, except that the messages on long click are transmitted when you release the switch, instead of right after the delay. So in this case one set of messages is sent on switch release if you clicked the switch shortly, and another set of messages is sent on switch release if you clicked the switch for longer than a second.

If you would have added some more messages to the start of the first message stream, before the LongPressDelay, these messages would always be sent on switch press, no matter how long or how short you pressed the switch. So you have the full flexibility of sending some messages at each click, sent an extra set of messages on quick release, and another set of messages after keeping the the switch pressed for a longer time. The delay value is of course fully customizable to suite your personal preference.

As you will understand from the description above, a LongpressDelay (or LongReleaseDelay) is meant to be used in the first message stream of a patch.

***Setup through the local LG2 menus***

Add one of following GORDIUS commands :

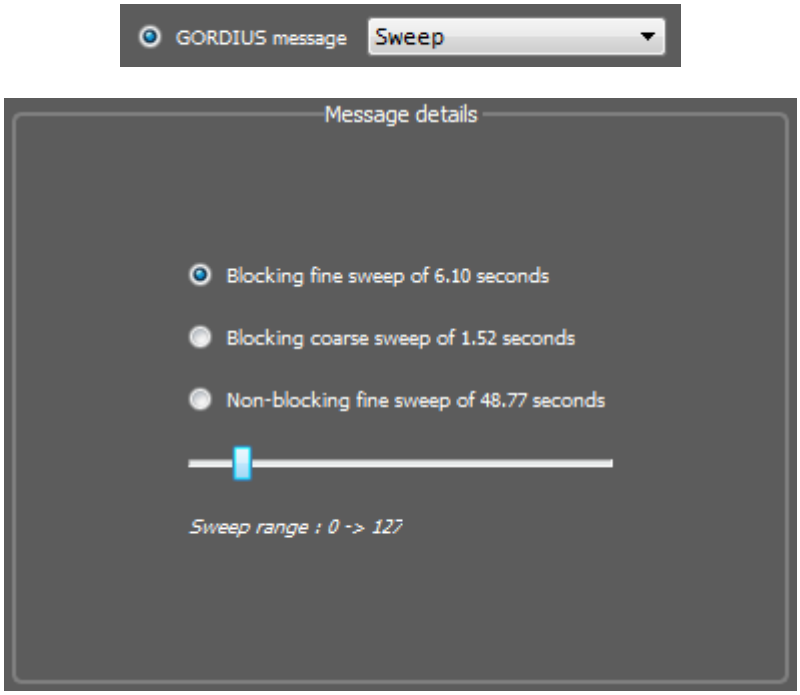
BlockingDelay
NonBlockingDelay
SyncedBlockDelay
SyncedNonBlDelay
LongPressDelay
LongReleaseDelay

These commands all have 1 property to set :

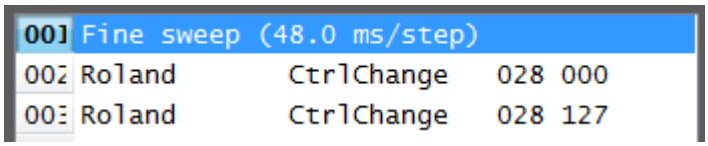
DELAY VALUE

In the local setup menus the delay value can be set to a value from 000 to 127. It will probably require some trial and error to find out what is the optimal value for your scenario. Doing the setup in ControlCenter gives you the advantage of seeing actual calculated time, expressed in seconds, for each type of delay.

## 10.6 Creating CC message sweeps


GORDIUS message
Sweep
Message details
Blocking fine sweep of 6.10 seconds
Blocking coarse sweep of 1.52 seconds
Non-blocking fine sweep of 48.77 seconds
Sweep range : 0 -> 127

This is an advanced feature, which allows you to "sweep" a certain sound parameter smoothly from one value to another. The programmed sweep message will result in a continuous stream of ControlChange messages from a certain start value to a certain end value. In order to specify the sweep range, the sweep command needs to be followed by 2 CC commands, containing the start value and end value for the CC sweep.




*The sweep message needs to be followed by 2 CC messages*

### *Sweep message types*

A blocking fine sweep will send a continuous CC message stream with the CC value increasing or decreasing by 1 at a time. The LG2 blocks until the CC sweep is finished (or until you select a different preset, which will interrupt the sweep). The time that a sweep takes is customizable, but also depending on the range of the sweep. A "full range" sweep (going from 0 to 127) can be programmed to take anything between 0.25 and 50 seconds.

A blocking coarse sweep will take steps of 4 instead of steps of 1. This means that you can do a large sweep in a shorter time compared to the "fine sweep".

A non-blocking sweep allows you to continue using your LG2, select extra effects for instance, while the sweep keeps running. It also allows to define much longer sweeps. A full range sweep can be programmed to take from 2 seconds up to a full 7 minutes! You can imagine that very cool things can be done with this feature…

You can stop a non-blocking sweep by selecting a preset which contains a similar sweep but with delay value 0. This preset will act like a *stop* button for the sweep. The blocking sweeps behave differently: a sweep in a stompbox will be interrupted as soon as you deactivate the stompbox, a sweep in a momentary effect will be interrupted as soon as you release the effect switch, and a sweep in a patch will be interrupted by selecting another patch.

***Two-way sweeps***

There is some additional intelligence built in with regards to interrupting a sweep, which allows you to do a “two-way sweep” with variable range. If you for instance define an “increasing” sweep in the first message stream of a momentary effect, and a similar “decreasing” sweep in the second message stream, the sweep will go up when you click the effect switch, and will smoothly go down again when you release the switch. The decreasing sweep will start from the value which was reached at the moment of releasing the switch. So this results in a triangle-shaped two-way sweep !

***Setup through the local LG2 menus***

Add one of following GORDIUS commands :

FineSweep
CoarseSweep
NonBlockingSweep

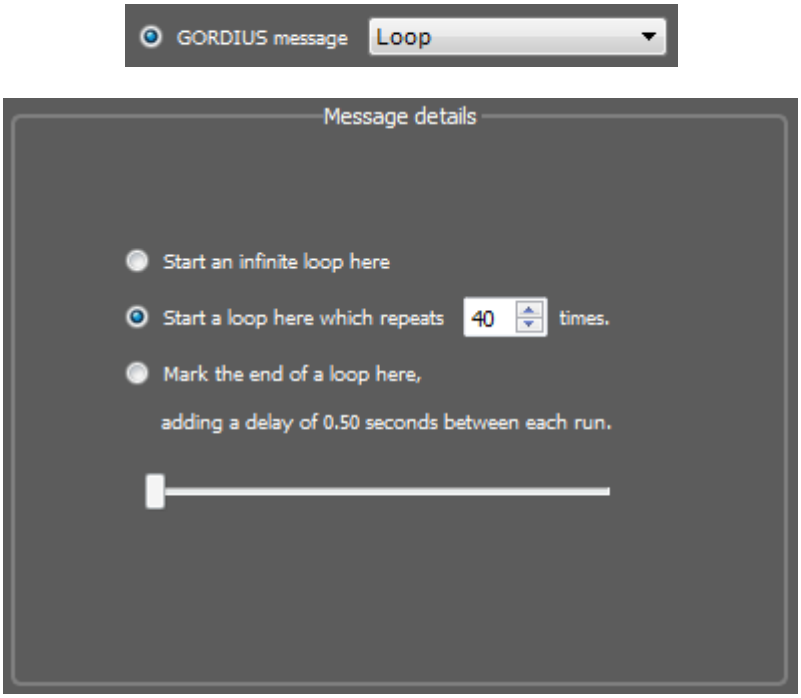
These commands all have 1 property to set :

DELAY VALUE

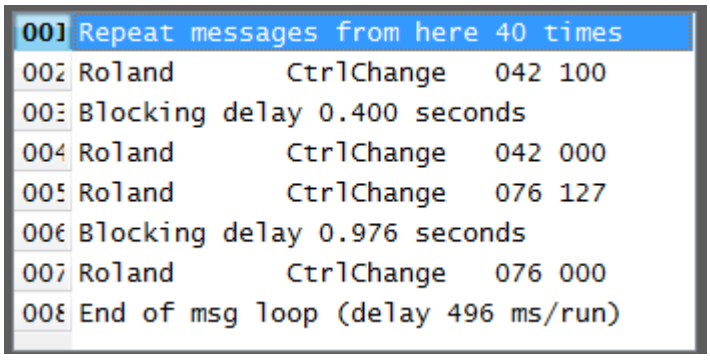
This property specifies the delay between each of the CC messages of the sweep. It is not obvious what the actual duration of the sweep will be for each of the delay values. This is also depending on the range of the sweep, and on the type of sweep (fine, coarse or non-blocking). The advantage of using LG2 ControlCenter to set up sweeps, is that the application automatically calculates the actual sweep duration, depending on the different parameters, and shows it to you expressed in seconds.

When doing the setup through the local menus, don’t forget to add 2 CC messages right after the sweep message, in order to define the sweep range. ControlCenter will warn you about this, the local menus won’t…

## *10.7 Creating message loops*




Yet another fun feature, which you won't find in any other MIDI footcontroller on the market today. Using 2 GORDIUS commands, you can define a "loop" in any message stream. Mark the start of the loop with a "start loop" message, and mark the end with an "end loop" message. Specify if you want the loop to run infinitely (that is, until another preset is selected) or for a fixed number of cycles. You can also specify a delay between each run of the loop. Interrupting the message loop is done in a similar way as interrupting a blocking sweep: by releasing a momentary switch, by deactivating a stomp box, or by selecting another patch.


001 Repeat messages from here 40 times
002 Roland CtrlChange 042 100
003 Blocking delay 0.400 seconds
004 Roland CtrlChange 042 000
005 Roland CtrlChange 076 127
006 Blocking delay 0.976 seconds
007 Roland CtrlChange 076 000
008 End of msg loop (delay 496 ms/run)

*A loop is created using a "start loop" and "end loop" command*

***Setup through the local LG2 menus***

Use following GORDIUS command + command parameter to mark the start of the loop :

```
RepeatFrom
-> NR OF CYCLES
```

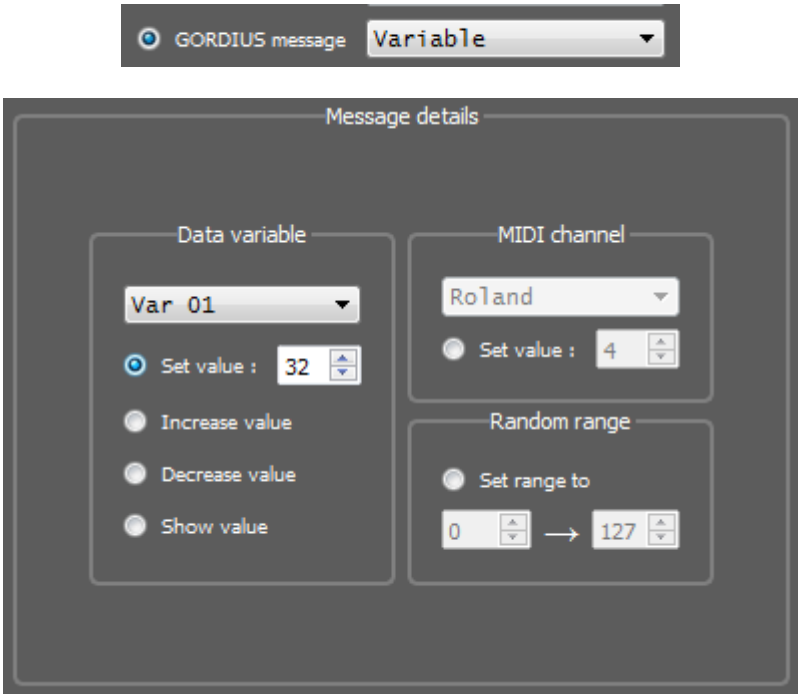
(fill in 0 here to create an infinite loop)

Use following GORDIUS command + command parameter to mark the end of the loop :

```
RepeatTill
-> DELAY VALUE
```

The delay value specifies the delay between each run.

## 10.8 Using variables, controlling MIDI channels, using random values




***Using data variables***

The possibility to use up to 100 data variables in your setup is a powerful feature of the LG2, which was already mentioned in chapter 9.13. With the "SetVariable" command, you can modify the value of a data variable to any value between 0 and 127.

One of the possible scenarios for the use of data variables: you could have a few effect stompboxes which send a toggling CC message (value 127 for on, value 0 for off), but with a data variable as CC number. Then, as part of a patch message stream you could trigger a few "Set Variable" commands which specify the actual CC numbers to use for the effect stompboxes. This is one of several ways to adapt the behavior of effect switches, depending on the currently active patch.

As the screenshot above shows, there are also commands available to increase or decrease a variable value. Let's give a typical example where these commands can be very interesting: you could create a custom Up/Down switch pair, which allows you to browse through all your sounds, as follows:

- Define a "ProgChange" variable (default value can be set to 0)
- Create a "Patch Up" preset, which triggers an "*increase value*" command for this variable, followed by a ProgramChange MIDI message with as value that same "ProgChange" data variable
- Create a "Patch Down" preset, which triggers a "*decrease value*" command for the same "ProgChange" variable, again followed by a ProgramChange MIDI message using that variable

That should do the trick.

A last command related to variables is called “ShowVar” (the “Show value” option in the command detail pane of ControlCenter). This commands triggers a 3-second popup of the current value of the specified data variable on the LG2 display. This way you know at any time what is the actual value being used for any of the variables.

***Modifying MIDI channels on the fly***

Also this feature has already been explained in chapter 9.13, with an example of a possible scenario which makes use of this option. The MIDI channel field in the screenshot above shows the option to set the value of any predefined MIDI channel to a new value.

***Random range***

Finally, there is a command available to set the range of the random number generator built into the LG2. Chapter 9.13 already explained how you can use a random number instead of a fixed value for any of the MIDI messages and some of the GORDIUS commands in your setup. The “*random range*” command lets you limit the allowed value range for the random numbers (by default that range is the full 000-127 allowed in MIDI message data bytes).

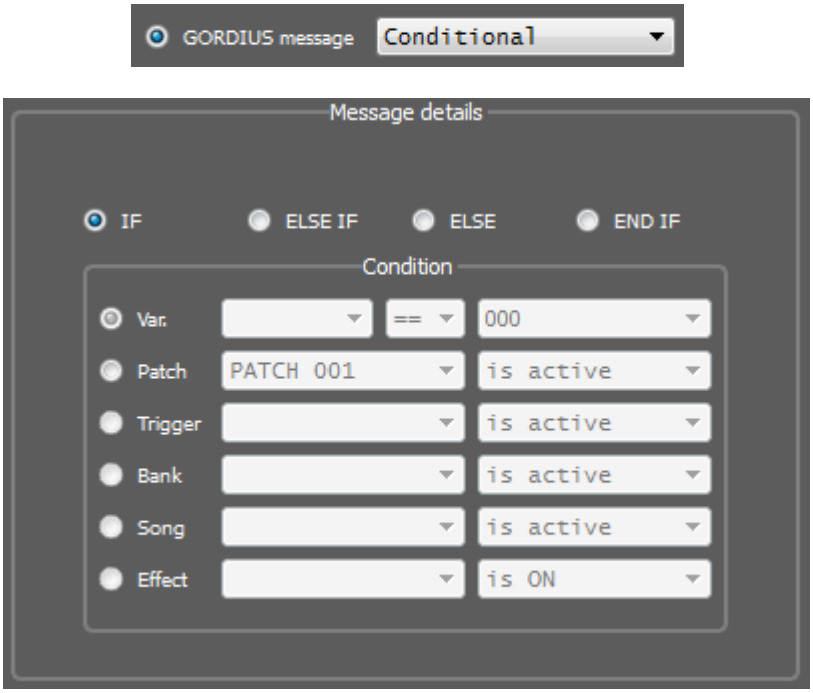
***Setup through the local LG2 menus***

In order to trigger the functionality mentioned in this topic, add one of following GORDIUS commands and fill in the according parameter(s):

```
IncVariable
-> VARIABLE INDEX

DecVariable
-> VARIABLE INDEX

ShowVariable
-> VARIABLE INDEX

SetVariable
-> VARIABLE INDEX
-> VARIABLE VALUE

SetMidiChannel
-> CHANNEL INDEX
-> CHANNEL VALUE

SetRandomRange
-> FROM VALUE
-> TILL VALUE
```

*Remark:* while LG2 ControlCenter allows you to use user friendly names both for MIDI channels and data variables, these names are not part of the setup downloaded to the LG2. Therefore, the local menus require the use of MIDI channel index (from 1 to 16) and data variable index (from 1 to 100) instead.

### *10.9 Using conditional logic (if… then… else….) in the preset content*




This is probably the most powerful feature of the LittleGiant. It actually allows you to approach the programming of your floorboard much like you would write a software program. Therefore you can consider this functionality “for advanced users only”. On the other hand, the command naming is straightforward and results in a well readible and logic message stream structure. If we start with showing a programming example, you won’t have much problems understanding what this preset should do :

```
If PATCH 001 is active
  Channel 01 ProgChange 001
ElseIf PATCH 002 is active
  Channel 02 ProgChange 013
Else
  Channel 04 CtrlChange 000 000
  Channel 04 ProgChange 021
EndIf
```

or another example

```
If Var 01 equals 0
  Channel 01 CtrlChange 007 010
ElseIf Var 01 less than 64
  Channel 01 CtrlChange 007 020
ElseIf Var 01 less than 127
  Channel 01 CtrlChange 007 040
Else
  Channel 01 CtrlChange 007 050
EndIf
```

Following conditions can be used :

- a certain patch or trigger is active, or not active
- a certain bank or song is active, or not active
- a certain 2-state effect is ON, or OFF
- a data variable can be compared with a fixed numeric value or with a second data variable : == , != , < , <= , > , >=

Conditions can be nested. That is, you can define an if…then… else structure inside another one :

```
If PATCH 001 is active
  If SB 001 is ON
    Channel 01 ProgChange 001
  Else
    Channel 02 ProgChange 001
  EndIf
ElseIf PATCH 002 is active
  If SB 001 is ON
    Channel 01 ProgChange 002
  Else
    Channel 02 ProgChange 002
  EndIf
EndIf
```

*Attention !! When nesting conditional expressions, make sure to add exactly as many "EndIf" statements as you have "If" statements ! If you don't do this, the conditional logic will fail to work correctly, since the LG2 will be endlessly "waiting for an EndIf".*

*The same remark applies when using simple conditions : never forget to add exactly one "EndIf" statement after each "If".*

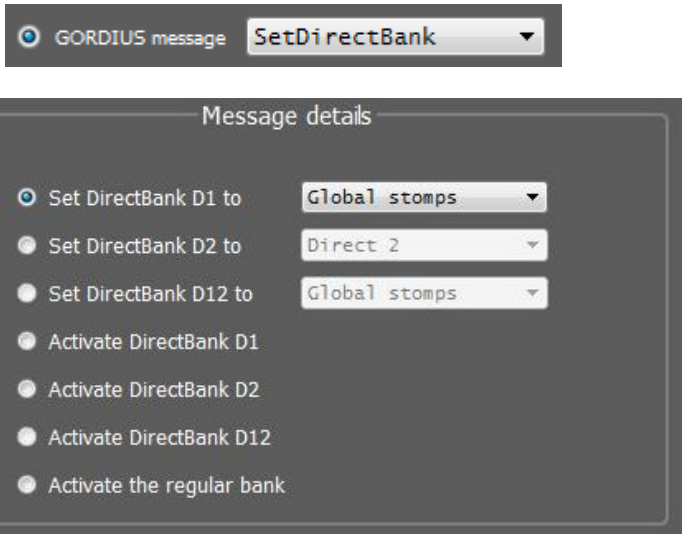
***Setup through the local LG2 menus***

In order to program the functionality mentioned in this topic, add one of following GORDIUS commands and fill in the according parameter(s):

```
If / ElseIf
-> CONDIION    (any of the conditions mentioned above)
-> TARGET ITEM (any patch,trigger,bank,song,stompbox)

IfVar / ElseIfVar
-> CONDIION    (any of the conditions mentioned above)
-> VARIABLE INDEX
-> COMPARE VALUE

Else

EndIf
```

*Remark:* while LG2 ControlCenter allows you to use user friendly names for data variables, these names are not part of the setup downloaded to the LG2. Therefore, the local menus require the use of the data variable index (from 1 to 100) instead. The compare value can be any value between 0 and 127 in order to compare with a fixed numeric value, or any value between 128 and 227 in order to compare with data variable 1 to 100.

## *10.10 Modifying the Direct Bank assignments or activating a Direct Bank*




The use of Direct Banks has been explained in chapter 9.17. The GORDIUS commands in this topic allow to modify the Direct Bank assignments with a footclick. As a result, you can actually have more than 2 direct banks at your disposal. A feature which most people won't need, but then again it allows you to find yet another clever way of organizing your presets. The "Activate D1" … commands allow you to turn any preset switch into a D1 (D2, D12) select switch.

Remark that the option "Set DirectBank D12" will only be enabled when you have activated the optional use of 3 direct banks in the Switches tab page (see chapter 9.9)

***Setup through the local LG2 menus***

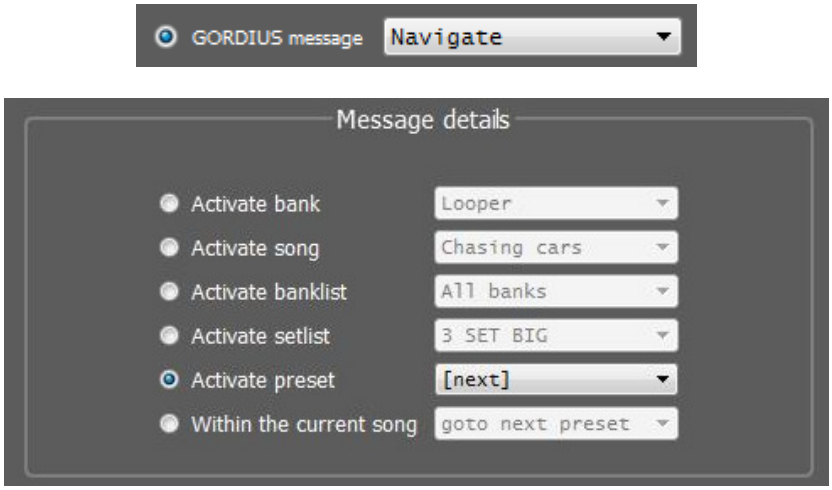
Use one of following GORDIUS commands :

```
SetD1Bank
SetD2Bank
SetD12Bank
```

with parameter `BANK (choose from list)`

```
ActivateD1Bank
ActivateD2Bank
ActivateD12Bank
ActivateRegular
```

## *10.11 Activating a bank, song, banklist, setlist, next / previous preset…*




The "*Navigate*" section allows to deviate from the standard navigation principle (which is very simple: use the Up/Down switches to go to the next/previous bank or song)

From within any bank, you can activate another bank by using the "*ActivateBank*" navigation command. You could imagine organizing your setup in just a few banks, and have a some global control switches which activate those banks… That would be kind-of extending the "Direct Bank" idea.

Similarly, you can navigate to a specific song with a footswitch.

Activating a different banklist or setlist allows you to reach a part of your setup which normally stays hidden. The LG2 will normally browse through all songs of the "current" setlist only. Choosing a different setlist is done with a few clicks in the local menus, by setting the "Default" property on the required setlist. However, you can make it even shorter, with a single footclick, by using this navigation command.

For all mentioned item types (banks, songs, banklists, setlists and presets), you also have the option in the dropdownox to choose "[next]", "[previous]" or "[prev.active]", which means you can step through the complete list of available banks, songs, banklists, setlists or presets, by creating a "next" and/or "prev" switch. The "[prev.active]" entry restores the previously active item.

*Attention:* for some specific technical reason, the [next]/[previous]/[prev.active] *preset* command should be called from within a trigger, not from within a regular patch, stompbox, or momentary effect.

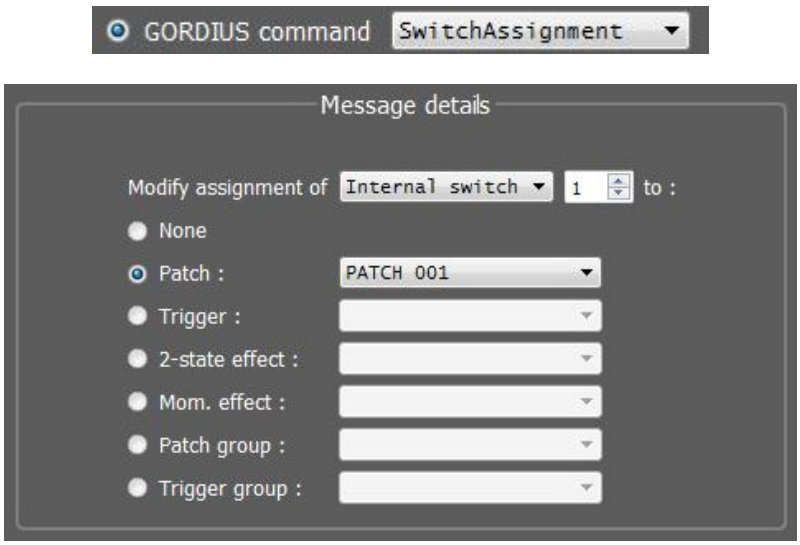
Finally, there is also a command to go to the next or previous preset "within the current song" : this option is to be used along with the creation of a patchgroup, linked to each song. This is explained in chapter 9.18 about the song setup. After specifying the list of presets for each song, you can create a pair of "next / prev. preset" switches to scroll through those presets. The same switch pair will browse through a different set of presets for each song.

***Setup through the local LG2 menus***

Below are the navigation commands and according parameters to be used when doing a setup through the LG2 menus :

```
ActivateBank
-> BANK     (choose from list)

ActivateSong
-> SONG     (choose from list)

ActivateBanklist
-> BANKLIST (choose from list)

ActivateSetlist
-> SETLIST  (choose from list)

GotoNextBank
GotoPrevBank
RestoreBank
GotoNextSong
GotoPrevSong
RestoreSong
GotoNextBanklist
GotoPrevBanklist
RestoreBanklist
GotoNextSetlist
GotoPrevSetlist
RestoreSetlist
GotoNextPreset
GotoPrevPreset
RestorePreset
NextSongPreset
PrevSongPreset
```

## 10.12 Reassigning individual switches



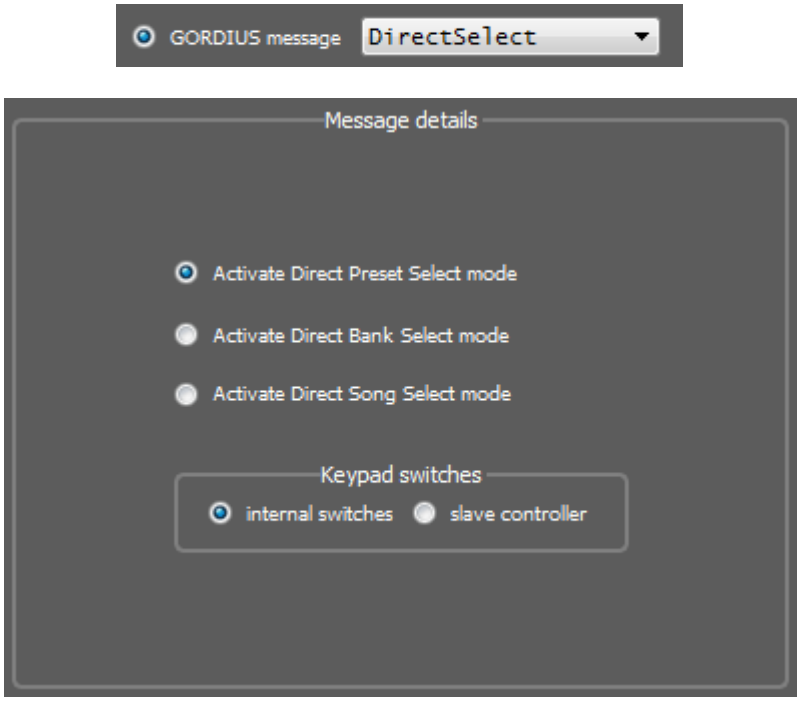

Another way to build a lot of flexibility into your setup : this command can change the switch assignment of the current bank on an individual base. Typical example is modifying some of the stompbox switches when you select a certain preset. This allows to have your bank layout adapted to the currently selected preset. Setup is straightforward: the same way as you do the initial switch assignment of all switches in the bank setup page, here you can specify an individual switch assignment to be modified.

### *Setup through the local LG2 menus*

Following command can be used when doing a setup through the LG2 menus :

```
AssignSwitch
-> SWITCH TYPE    (internal, external, slave)
-> SWITCH NUMBER
-> NEW ASSIGNMENT (choose from list)
```

### *10.13 Directly selecting any preset, bank or song*




It is possible to configure your LG2 for a completely different selection mechanism than the standard scrolling through banks and selecting a preset within that bank. Instead, you can use the switches of your LG2 as a 10-digit numeric keypad, and type a patch index in order to select that patch. This way you get “random access” to each patch in your setup. The patch index is simply the index which is shown next to each patch in the Presets tab page. After activating Direct Preset Select mode using the command shown above, simply type in the 3-digit patch index and it will get selected. This automatically brings you back to normal mode, in which you can activate effects using the switches of the current bank.

A similar “direct select” mode with digit entry can be used for direct selection of banks or songs. The way of working is identical to direct preset select. Any index from 000 to 999 can be used to directly select a bank or song from your setup.

Each of those 3 direct select options has an extra choice: you can specify to use the internal switches or the switches of a slave controller for this direct select. Obvioulsy the latter can only be chosen when you have activated use of a slave controller in the first tab of your setup (the Layout tab page). Using a slave controller as numeric keypad gives you the advantage that the internal switches stay available for “normal” operation, while using the slave controller exclusively for random access.

There is yet another mode of using the switches as numeric keypad, but that “keypad mode” is discussed in the next chapter.

***Setup through the local LG2 menus***

When doing the setup in the local LG2 menus, use one of following commands to activate direct select mode :

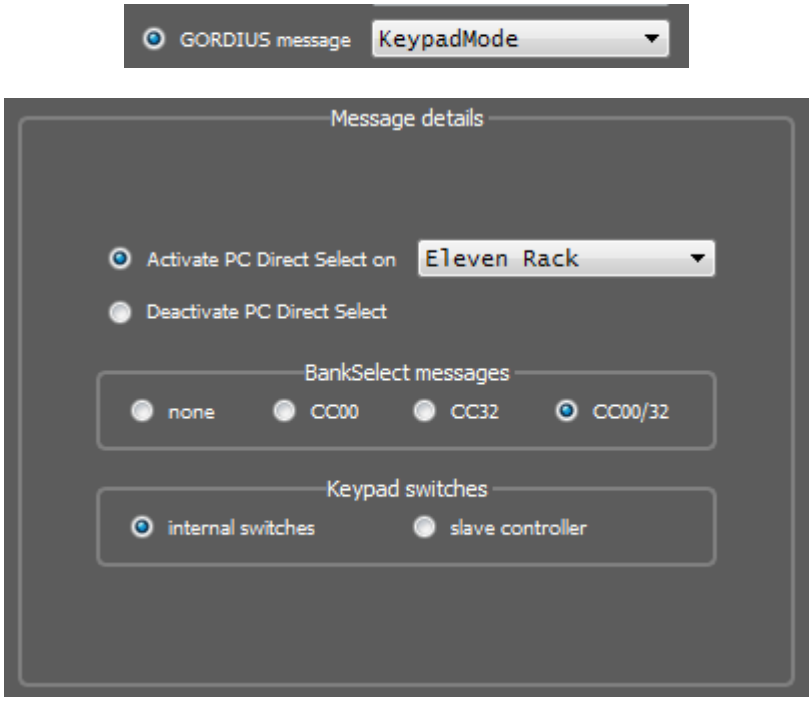
```
SetDirPresetMode
SetDirBankMode
SetDirSongMode
```

These commands all have 1 property to set :

```
KEYPAD SWITCHES (LG2 switches/Slave switches)
```

:

## *10.14 Directly typing in a ProgChange number*




Another type of “Direct Select” is the “Direct ProgChange” mode or “Keypad mode”. In this mode, you type a 3-digit ProgChange number, and right after that the according ProgamChange MIDI message is transmitted. This means you have random access to any sound of a sound module or any patch in an effects controller (the typical type of selection made with a MIDI ProgamChange message)

There are a few differences with the Direct Select modes discussed in previous chapter :

The LG2 provides 2 separate commands, one for activating this keypad mode, and one for de-activating it. If you have an LGX2 (which has 13 preset switches) the preferred way to layout your switches is to have a 2-state effect on switch 11, 12 or 13 to toggle between Keypad mode and normal mode. In Keypad mode, you have the keys 01-10 at your disposal for ProgChange number entry. Since the LG2 only has 10 preset switches, you won’t be able to use a Keypad toggle switch here. Indeed, once keypad mode has been activated, no regular preset is still available on any of the switches, they are all needed for numeric entry. In that case, you need to enter the number “999” to leave keypad mode.

While in keypad mode, you can also use the up and down switches to proceed to the next or previous patch within the complete patch list of your LG2.

You can optionally choose to have MIDI BankSelect messages automatically added to the Program-Change messages. As you know, the MIDI standard only allows a value in the range of 0-127 for PC numbers, while your gear might have more than 128 patches available. In that case, the patches are divided in banks, and a “BankSelect” message can be used to select the current bank of sounds. This BankSelect actually consists of two ControlChange messages : CC00 (coarse) and CC32 (fine).

Some manufacturers decided to use one single BankSelect CC message instead of two. Furthermore some decided to use the CC00 message, others use the CC32 message. Therefore, the LG2 gives you the choice to add any or both of those CC messages to the ProgChange message. This allows you to directly select any sound out of 999, by typing a digit between 0 and 998 (999 is reserved for leaving keypad mode)

***MIDI Channel used for keypad mode***

The command detail pane allows you to choose the MIDI channel to be used during keypad mode. The ProgramChange messages will be transmitted on that channel.

***Keypad switches***

Just like in previous chapter, also this keypad mode can be configured to work with the internal switches, or with the switches of the slave controller, if one is connected.

***ProgramChange Display range***

You may remember from chapter 9.10 that the LG2 leaves you the choice to work with Program-Change values between 000 and 127 or between 001 and 128. This choice also influences keypad mode: depending on the choice, you type number 000 or number 001 to directly select the first sound in the controlled gear. Below you can see how the full range of 999 sounds is split into different banks, depending on the chosen PC display range :

```
PC Display range 0  - 127          PC Display range 1  - 128

                                   000 = switch off keypad mode
000 = sound 1   of bank 1 ...      001 = sound 1   of bank 1 ...
127 = sound 128 of bank 1          128 = sound 128 of bank 1
128 = sound 1   of bank 2 ...      129 = sound 1   of bank 2 ...
255 = sound 128 of bank 2          256 = sound 128 of bank 2 ...
                          ...                                ...
998 = sound 103 of bank 8          998 = sound 102 of bank 8
999 = switch off keypad mode       999 = switch off keypad mode
```

***Setup through the local LG2 menus***

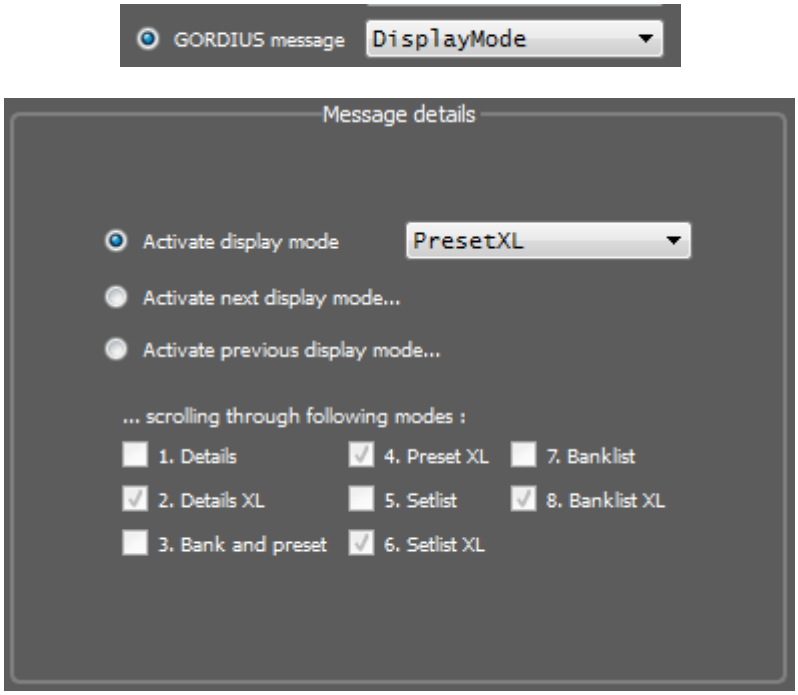
The command which activates keypad mode is called :

SetDirectPCMode

This command has following properties to set :

```
ACTIVATION      (Not activated/activated)
KEYPAD SWITCHES (LG2 switches/Slave switches)
BANK SELECT MSG (None/CC00/CC32/CC00+CC32)
MIDI CHANNEL    (1-16)
```

## 10.15 Controlling the current display mode



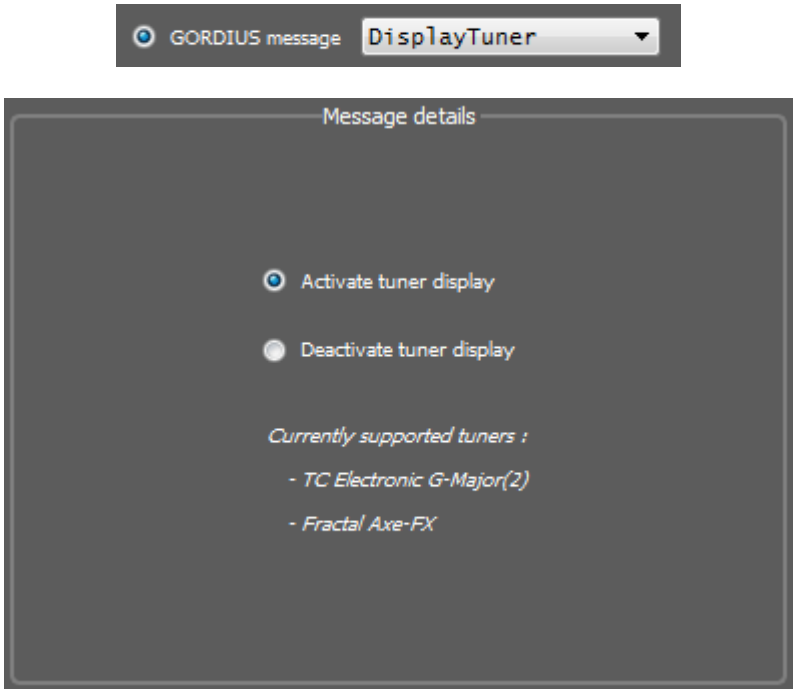

With the rotary knob of the LG2 you can select one of 8 available display modes. Of course it is not really convenient to need to bend over towards your floorboard to modify display mode (although many will choose their preferred display mode and stick to it while playing). The display mode control commands allow you to change display mode with a footclick. You can specify the display mode to activate, or you can define one or two scroll buttons to scroll through different display modes. When you define such next/prev buttons, you might want to scroll through a number of selected display modes only. The message details pane lets you specify that.

### *Setup through the local LG2 menus*

Do local setup in the LG2 menu by adding one of following commands :

```
SetDisplayMode
-> DISPLAY MODE (choice)

NextDisplayMode
-> USING DISPMODES (multiselect)

PrevDisplayMode
-> USING DISPMODES (multiselect)
```

## 10.16 Displaying a tuner




As mentioned in the details pane, this option is currently relevant for G-Major and Axe-FX users only. Those 2 devices have a built-in tuner, and send the tuner info out on their MIDI OUT connector. When you have a MIDI cable running from controlled device MIDI OUT to LG2 MIDI IN, the LG2 can receive this tuning info, and show it on its display in a graphical representation : a moving marker and some extra arrow indicators clearly show the tuned pitch and let you know when your guitar is in tune.

Along with this “DisplayTuner” command, which just activates the Tuner display on the LG2, you will also need to send a Tuner activation command to the device. This normally is a MIDI ControlChange message. Check the user manual of your gear to find out which CC number is needed for tuner activation.

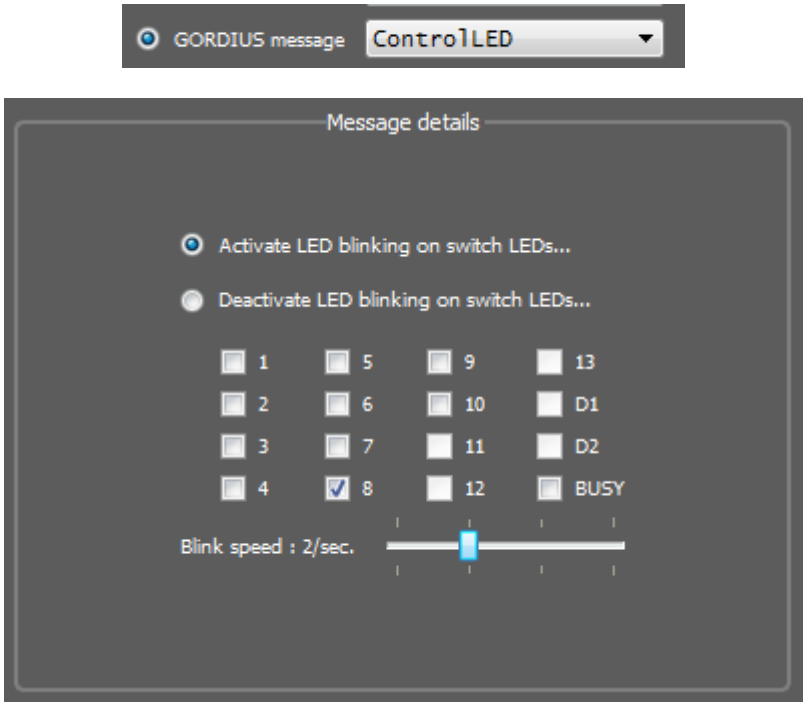
*Remark :* don’t confuse this with the MIDI message “TuneRequest” which you will find in the supported MIDI message list of the Little Giant. TuneRequest is the standard MIDI message which was intended for activating a tuner. However, most gear manufacturers decided to use a “regular” CC message for this functionality instead of this specific TuneRequest message, because probably none of the general MIDI controllers on the market (except the LG2) support sending these special messages, while all controllers are able to send a simple CC message.

### *Setup through the local LG2 menus*

Use following command :

```
SetTunerDisplay
-> ON OR OFF
```

## 10.17 Directly controlling the (blinking) LEDs




Of course the main function of the switch LEDs is to show which patch is currently active, and which effects are currently on. However, in some cases you might want to use one of the LEDs to indicate some specific states of a device. Think about looper control for instance. Most probably you will use one or more trigger switches to trigger the different actions like play, record, overdub, etc. But since a looper has more than 2 states (it's not just an on/off effect), you could indicate the current state by making a certain LED blink at a certain speed.

This can be done with the LED blinking commands. Just specify which LED(s) need to blink at which speed. This gives you total control over the LG2 switch LEDs. However, it is advisable to only control LEDs of switches which are not linked to any preset, or which are linked to a trigger or momentary effect (these always have their LED off after releasing the switch).

The same GORDIUS command can also be used to undo the LED blinking.

### *Setup through the local LG2 menus*

Use following command and parameters :

```
BlinkLED
-> LED SELECTION (multiselect)
-> BLINK SPEED
```

Use blink speed = 0 in order to undo the LED blinking.

## 10.18 Controlling the relays of a slave controller

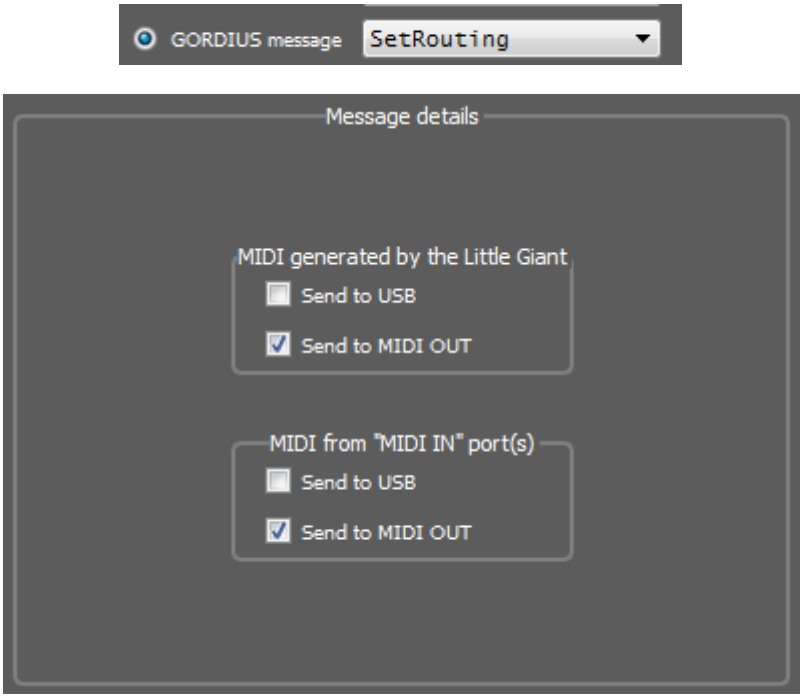
The LG2 has full support for the Behringer FCB1010 and Roland FC-200 and FC-300 as slave controller. One of the features of this integration is that the Little Giant can control the switch relays on those units. Such a switch relay is a jack output which can be connected to a switch input of a non-MIDI-controlled amp in order to switch channels in that amp. You can program a GORDIUS Relay command into the activation and deactivation message of an LG2 stompbox. This allows you to merge control of non-MIDI-enabled devices with the MIDI control of other devices.

### *Setup through the local LG2 menus*

Use following commands with according parameter :

```
CloseRelay
OpenRelay
-> RELAY INDEX (1-6)
```

## 10.19 Changing the MIDI / USB routing on the fly



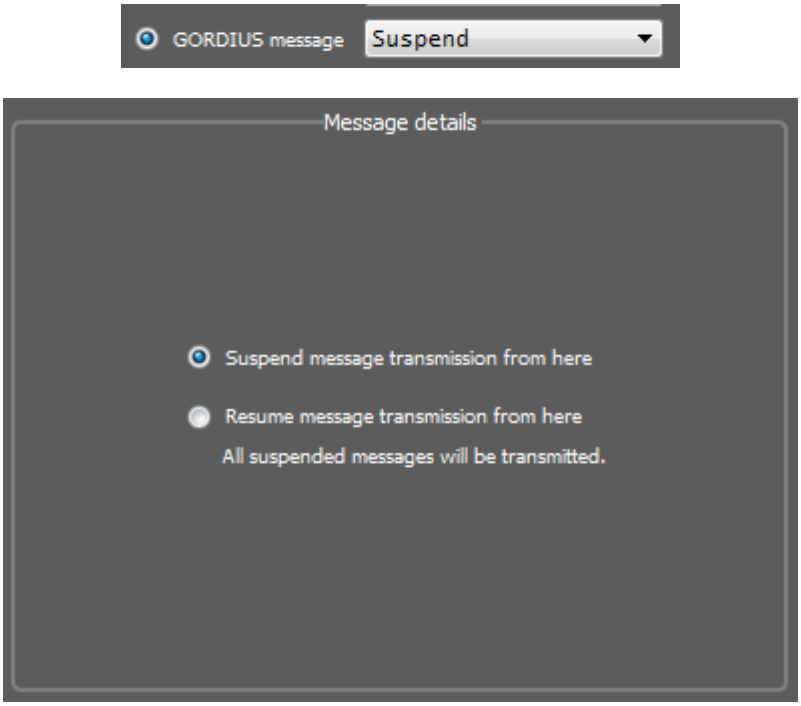

Chapter 4.1 explains the different USB and MIDI routing options of the LG2. If you want (but most of you won't want it…) you can change this routing on the fly, by using the SetRouting GORDIUS command. Setup is obvious.

### *Setup through the local LG2 menus*

Use following command :

```
SetRouting
-> ROUTING FROM/TO (multiselect : LG2 TO MIDI/LG2 TO USB/
                                  MIDI IN to MIDI/MIDI IN to USB)
```

## 10.20 Temporarily suspending MIDI message transmission




As last command in the row again a powerful one, but probably sparsely used. With a Suspend command, you can temporarily block all MIDI transmission. During this blocking, all MIDI messages to be sent are actually stored in a buffer instead. At the moment of unlocking this suspend state, all messages in the buffer are “flushed” (that is, they are actually transmitted). This suspend state allows you for instance to “prepare” a certain sound by selecting a patch and activating/deactivating certain effects up front. Unlocking the suspend state will cause all prepared initialization actions to be executed simultaneously with one click.

### *Setup through the local LG2 menus*

Use following command :

```
SuspendXmission
-> ON OR OFF
```

# 11 Troubleshooting

As you have read in this manual, the feature set of the Little Giant is immense. This makes it a pretty complex device, despite its nature of being “merely” a MIDI foot controller. In this chapter we give a few tips and tricks which might help you when you’re stuck with an LG problem.

*Switches, LEDs, and expression pedals*

The Little Giant contains a hidden diagnostic screen which helps you locate a possible defect or bad contact in LEDs or switches. You can launch this diagnostic screen by keeping the *up* and *down* switches pressed during startup. Keep them pressed until the splash screen (with moving ball) disappears.

- First you will see a “LED looping” test, which lights up each of the LEDs one by one. This way you can inspect if any LED is defective. Leave this test by clicking the rotary knob
- A second screen lets you test each of the switches. When pressing any switch, the according LED should go on. (the *up* and *down* switches cause one of the MIDI indicator LEDs to light up). Again leave this test by clicking the rotary knob.
- A next test shows an arrow, pointed to the left or to the right, when turning the rotary knob counter clockwise or clockwise .
- The last test screen allows you to test the jacks for external switches and expression pedals. Connect an expression pedal to each of the EXPR inputs. Moving the pedal should result in a modifying hexadecimal value displayed on the LCD screen: it smoothly changes between roughly “04” and “7C”. Turning the rotary knob inverts the jack wiring (exchanges tip and ring): if the rightside number on the test screen shows 01, jack 1 wiring is inverted, if is shows 02, jack 2 wiring is inverted, etc.

*MIDI connections and routing*

If your controlled gear does not react upon any floorboard action, first thing to check is the MIDI / USB routing (see chapter 4) :

- If your floorboard has a USB cable connected, and seems to react very slowly (patch LED going on only half a second after clicking a switch), check if a MIDI application is actively listening to the correct MIDI IN device. If ControlCenter is launched for instance, but an incorrect MIDI IN device is selected, the LG will send MIDI messages to the USB connection, and wait for a response for 0.5 second after each message. You can notice this as the LG reacting very slowly to each switch click.
- The MIDI monitor screen of the LG only shows activity on the MIDI ports, not on the USB ports. So nothing will appear on that screen if no data is routed to the MIDI OUT port.
- There is no USB or MIDI communication during setup. Therefore, don’t try to launch Control-Center and connect your LG2 with the computer while you are in setup mode. First leave all internal menus, and only after that launch ControlCenter and click the “Connect” button.

*Expression pedals*

If you are confident about the pedal connections (by doing the diagnostic test mentioned at the start of this chapter) and still have no messages transmitted by the expression pedal :

- run the calibration procedure, as described in chapter 5.1
- Check if you assigned an expression pedal setup globally to the used expression pedal input., as described at the beginning of chapter 9.14
- Remember that the use of an “engage value” will block sending any messages until that value has been reached.

*No bank is loaded at startup, no up/down switch actions*

Remember that your setup needs to have at least one banklist defined and marked as “default”. Without such banklist, your LG2 will not load any bank and you won’t be able to select a bank using the *up/down* switches.

*Setup related problems*

At all times, you can use the built-in monitor screen of the LG2 to inspect the outgoing MIDI messages. If the messages are OK but your connected gear does not react as you expect, you might need to double check if the controlled device is listening to the correct MIDI channel.

*Unable to enter setup mode, change display modes, change banks*

Remember there is a menu knob lock available. Check if this wasn’t enabled unintentionally. See chapter 9.9.

*Factory reset*

If you believe your setup is somehow corrupted, causing the Little Giant to behave incorrectly, you can do a *factory reset* at all time. This clears the preset memory of your unit completely, bringing it back in the state in which you received it. This factory reset can be done by switching off the unit, connecting a standard MIDI cable between the *MIDI OUT* and *FROM FCB* ports, and switching the unit back on. A warning message will appear, asking confirmation before doing the factory reset.

Of course, such a reset is only necessary if the unit would refuse to behave correctly, and therefore can no longer communicate with ControlCenter. If communication is no problem, you can clear the current setup simply by creating a new (empty) setup in ControlCenter, and downloading it to your unit.

*Help – I’m lost!*

If none of the above suggestions is of any use for solving the issue you encounter, just contact us at *info@gordius.be,* we will be glad to help you with any setup related questions you have.

# Appendix A : Little Giant technical specifications

### LG2

| | |
|---|---|
| Size: | 340mm x 165mm x 70-100mm (L x W x H)<br>13.4" x 6.5" x 2.8-3.85" (L x W x H) |
| Weight: | 2.25 kg<br>5.0 Lbs |
| Power: | 9V DC or AC, 500mA minimum<br>connector: 2.1mm x 5.5mm (positive center or negative center) |
| Footswitches: | 10 preset switches<br>1 Up switch<br>1 Down switch<br>Switch 9 can be used as DirectBank1 switch<br>Switch 10 can be used as DirectBank2 switch |

### LGX2

| | |
|---|---|
| Size: | 550mm x 165mm x 70-100mm (L x W x H)<br>21.65" x 6.5" x 2.8-3.85" (L x W x H) |
| Weight: | 3.0 kg<br>6.6 Lbs |
| Power: | 9V DC or AC, 500mA minimum<br>connector: 2.1mm x 5.5mm (positive center or negative center) |
| Footswitches: | 13 preset switches<br>1 DirectBank1 switch<br>1 DirectBank2 switch<br>1 Up switch<br>1 Down switch |

### LGM2

| | |
|---|---|
| Size: | 200mm x 80mm x 40-75mm (L x W x H)<br>7.9" x 3.15" x 1.6-3.0" (L x W x H) |
| Weight: | 0.7 kg<br>1.6 Lbs |
| Power: | 9V DC or AC, 350mA minimum<br>connector: 2.1mm x 5.5mm (positive center or negative center) |
| Footswitches: | none |

**Connections** (identical for LG2 / LGX2 / LGM2)

- USB: 1 x USB B type connector (standard USB cable 180cm included)

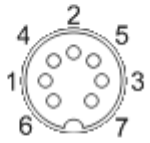
- MIDI: 1 x 7-pin + 1 x 5-pin DIN connector for standard MIDI IN / MIDI OUT
(phantom power options : see Appendix B)

- FCB: 1 x 7-pin + 1 x 5-pin DIN connector for connecting a slave controller
Can also be used as additional MIDI IN / MIDI OUT
(phantom power options : see Appendix B)

- Ext.switches / expr.pedals:
4 jack inputs for configurable external switches or expression pedals
All different wirings supported through software configuration

# Appendix B : Little Giant MIDI connector configurations

2 of the 4 MIDI connectors (“MIDI OUT” and “FROM FCB”) are 7-pins connectors, instead of the regular 5-pins. These 2 connectors can be configured in different ways. Configuration is done by placing some jumpers on the Little Giant main board. Therefore, the desired configuration needs to be specified during the online ordering process for a Little Giant. Later on, it is still possible to change this configuration yourself. There is no soldering required, just moving the jumpers to a different position, but this requires a complete disassembly of the unit in order to reach the main electronics board. Instructions are given below.

| REGULAR MIDI IN | REGULAR MIDI OUT | 7-PINS MIDI IN | 7-PINS MIDI OUT |
|---|---|---|---|
| LG2 "MIDI IN" port | LG2 "TO FCB" port | LG2 "FROM FCB" port | LG2 "MIDI OUT" port |
| | |  | |
| 4,5 MIDI IN | 4,5 MIDI OUT | 4,5 MIDI IN | 4,5 MIDI OUT |
| 1,3 No Connect | 1,3 No Connect | 1,3 *configurable* | 1,3 *configurable* |
| 2 No Connect | 2 Shield | 2 No Connect | 2 Shield |
| | | 6,7 Power | 6,7 Power |

As mentioned in the schematic above, the different configurations apply to pins 1 & 3 of the 7-pins connectors. The MIDI standard specifies that these pins should be not connected. However, some manufacturers reuse these pins for specific needs (phantom power or 2-way communication). Therefore, when you order an LG2 with configuration other than the “regular MIDI IN” or “regular MIDI OUT”, you actually make the LG2 no longer MIDI compliant… Of course this shouldn’t be an issue, since you will only choose one of those special configurations because the connected device supports this. But keep this in mind when connecting other devices to the LG2. Especially the option “phantom power through 5-pins connector”, discussed later, is a “dangerous” one, since it can cause power to be applied to pins 1 & 3 of the connected device. This can result in severe damage if the connected device actually uses these pins for something you were not aware of…

***Attention !***

We just mentioned that pins 1 & 3 are defined as “not connected” in the MIDI spec. As a result, many 5-pins MIDI cables on the market actually don’t have pins 1 & 3 wired. When you decide to use one of the special configurations, which reuse those unused pins, don’t forget to check your MIDI cables, and make sure they have pins 1 & 3 actually wired! On our GORDIUS website, you can order “7/7” and “7/5” MIDI cables. The 7/7 cable has a 7-pins connector at both ends, and has all 7 pins actually wired. So it is safe to use this cable with the 2-way communication option. The 7/5 cable has a regular 5-pins connector plus female power jack at one end. It does NOT have pins 1 & 3 wired, so this cable can only be used to combine phantom power with MIDI OUT, no 2-way communication is possible with this cable.

### *Phantom power (using pins 6 & 7 of the 7-pins connector)*

All 7-pins connectors of the LG2 carry power on their pins 6 and 7: these 2 pins are simply connected to the 2 leads of the LG2 power connector. This means that the LG2 can be “phantom powered” by the connected device. This functionality is available for any of the MIDI connector configurations discussed later on, since we are now talking about power supplied through pins 6 & 7, while these configurations only define an alternative use for pins 1 & 3.

#### *Phantom power through the LG2 “MIDI OUT” port*

There are 3 common cabling scenario’s to support phantom powering of the floorboard :

a) the controlled device supports phantom power through its 7-pins MIDI IN connector.

This is for instance the case for the Fractal Axe-FX. In this case, cabling is simple: you can use a regular “7/7” (7-pins to 7-pins) MIDI cable, which will carry the power signal along with the MIDI. Important to notice is that controllers supporting phantom power on their MIDI IN connector normally do NOT supply this phantom power on their own (there is no standard whatsoever on voltage and power requirements for the different MIDI controllers on the market). These devices just provide a separate “phantom power in” connector, where you can plug in the power adapter of your MIDI controller.

b) the controlled device supports phantom power through a regular 5-pins MIDI IN connector.

This is for instance the case for the Voodoo Lab GCX guitar audio switcher. In this case, the pins 6 & 7 of the 7-pins MIDI OUT are not used. For this scenario refer to the further topic about the pin 1 & 3 configuration for phantom power.

c) the controlled device does not support phantom power.

In this case, it is still possible to “phantom power” your LG2 from the controlled rack, and not have any need for a power outlet near your floorboard. You just need a special “7/5” (7-pins to 5-pins) MIDI cable. Such a cable has a 7-pins connector at one side, which can be plugged in the MIDI OUT of the LG2. At the other end, the cable has a regular 5-pins MIDI cable, to be plugged in the MIDI IN connector of the controlled device, and a separate female power jack. The LG2 power adapter can be plugged in this jack at the rack side, and the MIDI cable will carry the power to the floorboard.

#### *Phantom power through the LG2 “FROM FCB” port*

Completely similar to the scenario’s described above, it is also possible to “phantom power” a slave controller, connected to the “FROM FCB” port of the LG2. Provided that this slave controller carries a 7-pins MIDI OUT connector, a single 7/7 MIDI cable will be sufficient to carry both MIDI and power. None of the slave controllers, supported today by the LG2, have the possibility to accept phantom power. However, we at GORDIUS plan to release slave controllers in the future, which obviously will take advantage of this possibility.

***Remarks :***

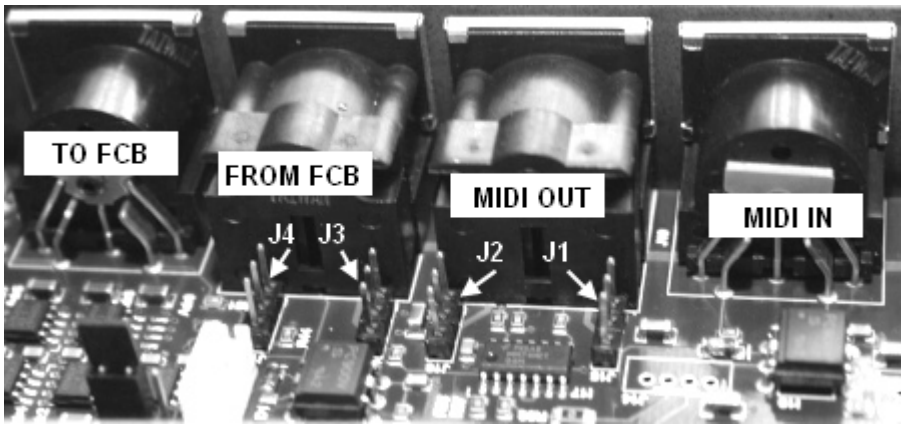
- As you will understand, this phantom power option is nothing but an “extension” for you power lead. It enables you to move your power adapter away from the floorboard. Of course you still need to connect your LG2 power adapter at the other end of the cable carrying the phantom power. And more important: never try to connect a power adapter to the LG2 while you have another adapter supplying phantom power. This will cause a short between both power supplies, which can result in severe damage!

- You might not know the exact wiring of the phantom power connectors used in controlled devices. The 2 power leads may well be inverted by the time they arrive at the LG2. Don’t worry about this, the LG2 was designed specifically to work with these different wirings. Applied power can be 9V AC, 9V DC with positive center pin, or 9V DC with negative center pin.

- If you want to power several devices from the same power adapter, don’t forget to check if the adapter supplies sufficient power. The LG2 requires 500mA on 9V (AC or DC). Add this to the spec of the other device in order to know the total required power. The adapter supplied with the LG2 is not suited for powering multiple devices.

### *The different configurations for pin 1 & 3 of the 7-pins connectors*

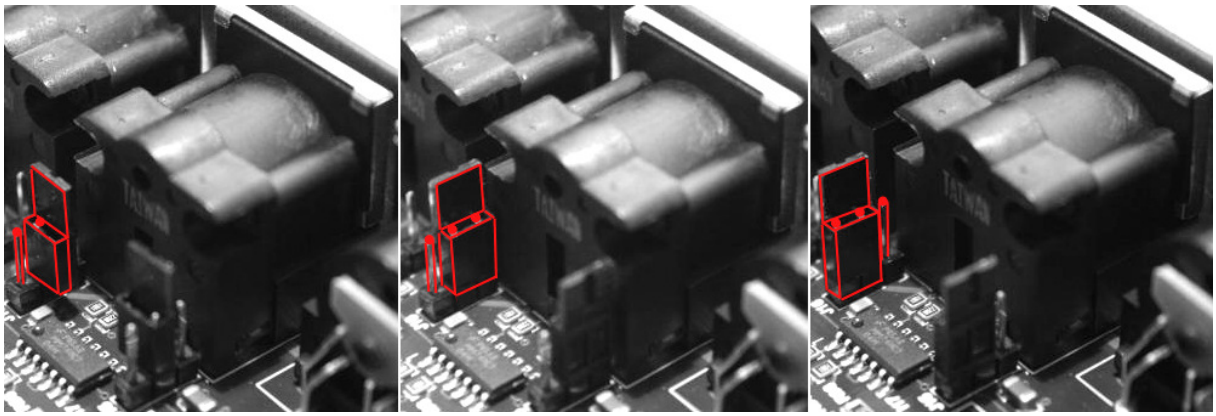
The main board of the LG2 contains 4 jumpers, labeled J1, J2, J3 and J4 on the picture below. J1 & J2 configure the “MIDI OUT” connector, J3 & J4 configure the “FROM FCB” connector.




*View on the LG2 main board, backside of the MIDI connectors*
*( for LG2 hardware v.2.5 and higher, see Addendum ! )*

Three different options can be chosen :

- regular MIDI IN (for the FROM FCB connector) or regular MIDI OUT (for the MIDI OUT connector)
- phantom power through a 5-pins cable
- 2-way communication (carrying both MIDI IN and MIDI OUT over 1 cable)



*regular MIDI IN or OUT* *phantom power through 5-pins* *2-way communication*

*( for LG2 hardware v.2.5 and higher, see Addendum ! )*

***"Regular MIDI IN" / "Regular MIDI OUT" (for the "FROM FCB" / "MIDI OUT" connector)***

With this configuration, the pins 1 & 3 are not connected to anything, just like it should be for a regular MIDI connector. As you can see in the left side picture above, the jumpers are placed so that no 2 adjacent pins are connected to each other.

Use this configuration whenever you don't have any particular reason to choose another one… It ensures that you can use your LG2 with any MIDI compatible device.

***Phantom power through 5-pins cable***

You can read all details about phantom powering in a previous topic. One of the cabling scenarios mentioned there was the option where the controlled device supports phantom power through pins 1 & 3 of a regular 5-pins connector. The Voodoo Lab GCX guitar audio switcher is one example of such device.

In order to support this scenario, the LG2 needs to configured so that pins 1 & 3 are connected with the 2 leads of the LG2 power jack. This is done by placing the 2 jumpers in the position closest to the MIDI connectors, as shown in the middle picture above.

As we mentioned earlier, this is a "dangerous" option, because it definitely turns your LG2 into a non-MIDI-compliant device. When you decide to connect a different device to the LG2 MIDI OUT connector, and therefore power the LG2 through its own power jack, the incoming power is also sent to pins 1 & 3 of the MIDI OUT connector. Shouldn't be a problem with a standard MIDI device at the receiver side, but things can go wrong if this device actually has some internal circuitry connected to these pins 1 & 3.

***2-way communication***

For the moment there is only one device we are aware of that supports 2-way communication through a 7-pins connector, and that's the Fractal Axe-FX. In this case, the pins 1 & 3 are used to send MIDI from controlled device back to the floorboard, while the regular "MIDI OUT" pins are used for sending MIDI commands from floorboard to guitar effects processor.

This option is configured by setting the jumpers in the position *away* from the MIDI connector, as shown in the rightside picture above. In this case, the signal pins of the MIDI IN connector are simply interconnected with pins 1 & 3 of the MIDI OUT connector. This also means that with this configuration it is ***no longer*** **allowed** to use the MIDI IN connector! If you would do so, you would create a "short" between the MIDI OUT signal of the 2 connected devices, which could result in a damaged MIDI circuit (although these circuits by design should be protected against this kind of shorts, but you never know…)

***Disassembly instructions***

The jumpers shown in the pictures on a previous page are located on the main electronics board of the LG2. In order to change the configuration, you have to disassemble the Little Giant so that you can reach the main board.

1. Remove the bottom plate.

Remove 6 (LG2) or 8 (LGX2) black screws at front side and back side. This allows you to lift the upper part and remove the bottom plate.

2. Remove the module from the floorboard.

Lay your LG2 or LGX2 upside down on a soft surface. Disconnect the big flatcable running from module to connector board. Be careful, this is a tight connection, pay attention not to touch any of the surrounding wiring. Remove 4 steel screws which hold the module. Carefully remove the module, guiding the flatcable through the hole.

3. Open the module.

Remove 5 black screws (2 at front side, 3 at back side). *Gently* lift the upper cover of the module. Attention! There is wiring running from upper cover to bottom part. You can tilt the upper part and place it in front of the module bottom part, without disconnecting any of the cabling.

4. Modify the jumper placement

Modify the jumper placement to match the required configuration, as described in the previous topics.

5. Assemble the controller

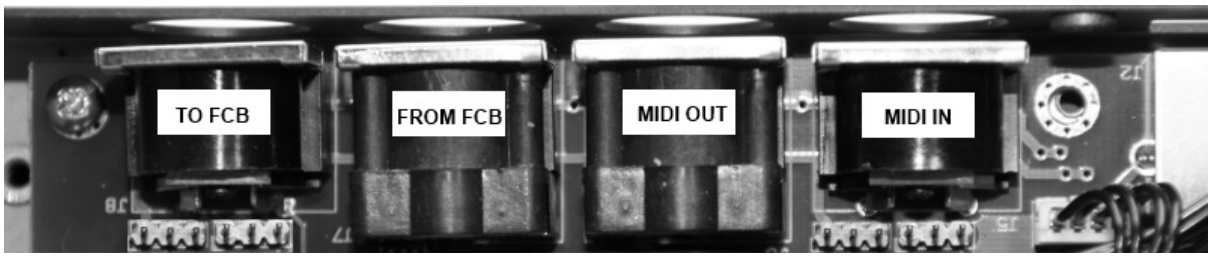
Just follow the same steps as above in opposite direction to assemble the controller again.

### *ADDENDUM for LG2 hardware v.2.5 or higher*

If you own an LG2 or LGX2 with hardware v.2.5 (or higher) the jumper placement is different from the pictures above. You can check your hardware version by going to the following internal menu:

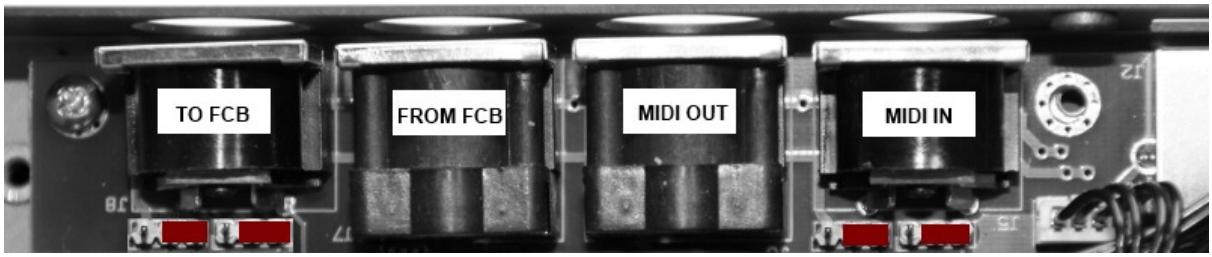
Service > About my unit > HW version

The v.2.5 hardware has a separate connector board which contains the 4 jumpers. 2 jumpers next to the “TO FCB” connector configure the “FROM FCB” wiring options. 2 jumpers next to the “MIDI IN” connector configure the “MIDI OUT” wiring options.



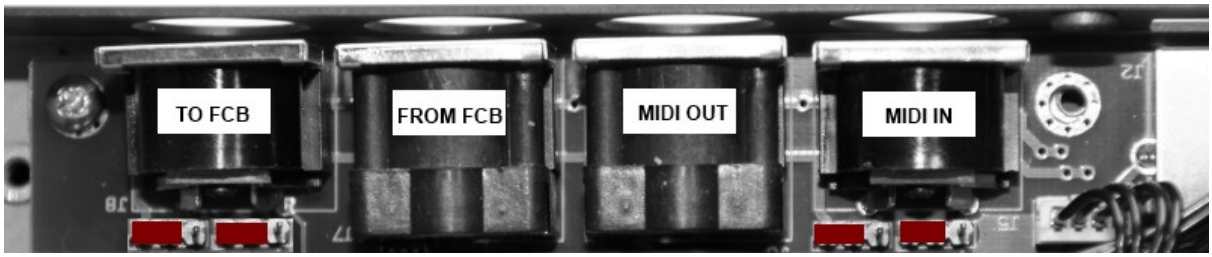

*View on the LG2 v.2.5 connector board*

The picture above, without jumpers, shows the regular “FROM FCB” and “MIDI OUT” configuration.




*2-way communication*

Insert 2 jumpers in the positions shown above to put the “MIDI OUT” connector (right side) or “FROM FCB” connector (left side) in 2-way communication mode.




*Phantom power through 5-pins*

Insert 2 jumpers in the positions shown above to put the “MIDI OUT” connector (right side) or “FROM FCB” connector (left side) in 5-pin phantom power mode.